



THE JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND

Conferring of Degrees
at the close of the ninety-second academic year



JUNE 11, 1968
Keyser Quadrangle
Homewood

THE JOHNS HOPKINS UNIVERSITY
Baltimore, Maryland 21218

Office of the Registrar

June 11, 1968

ADD TO BACHELORS OF ARTS

Michael Bradley Blaylock, of Baltimore, Md.
David Eugene Farley, of Maplewood, N.J.
George Randal Haithcock, of Greenville, S.C.
Charles Henry Hochmuth, of Chevy Chase, Md.
Robert Lord, of Silver Spring, Md.
Timothy Francis Lyons, of Windsor, Conn.
Richard Harvey Meltzer, of Philadelphia, Pa.
Alan Dale Mitchell, of Tallahassee, Fla.
Harold Ernest Mueller, Jr., of Baltimore, Md.
James Hutchinson Parmenter, of Atlanta, Ga.
James John Pollock, of Baltimore, Md.
Walter Jones Tucker III, of Springfield, Va.

ORDER OF PROCESSION

The Graduates

Marshals

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CARL CHRIST
ROBERT E. GREEN, JR.
JOHN W. GRYDER
EDGAR A. J. JOHNSON

RICHARD A. MACKSEY
EVANGELOS MOUDRIANAKIS
JOHN H. MULHOLLAND
OWEN M. PHILLIPS
WILLIAM POOLE

EVERETT L. SCHILLER

*

The Faculties

Marshals

JAMES DEESE and JOHN WALTON

*

The Deans, The Vice Presidents, The Trustees, and Honored Guests

Marshals

FERDINAND HAMBURGER and ALSOPH H. CORWIN

*

The Chaplain

The Vice Chairman of the Board of Trustees

The Presentors of the Honorary Degree Candidates

The Honorary Degree Candidates

The Chairman of the Board of Trustees

The President of the University

Chief Marshal

ALFRED D. CHANDLER

*

For the Presentation of Diplomas

Marshals

ELLIOTT COLEMAN
BLAIR KINSMAN

PHOEBE STANTON
M. GORDON WOLMAN

*

The ushers are members of the Undergraduate Student Body

ORDER OF EVENTS

Lincoln Gordon, President of the University, presiding

PROCESSIONAL

GRAND PROCESSIONAL MARCH C. GOUNOD

John H. Eltermann, Organist

The audience is requested to stand as the Academic Procession moves into the area and to remain standing until after the Invocation and the singing of the University Ode

*

INVOCATION

Chester L. Wickwire

Chaplain of the University

*

THE STAR-SPANGLED BANNER

THE UNIVERSITY ODE

*

GREETINGS

Robert D. H. Harvey

Chairman of the Board of Trustees

*

CONFERRING OF HONORARY DEGREES

PHILIP BARD, *Professor Emeritus of Physiology and former Dean of The Johns Hopkins School of Medicine*

EDWARD W. BROOKE, *United States Senator from Massachusetts*

LAWRENCE JOSEPH CARDINAL SHEHAN, *Archbishop of Baltimore*

PENDLETON HERRING, *President of The Social Science Research Council*

*

ADDRESS

Pendleton Herring

*

SPECIAL ANNOUNCEMENT

Lincoln Gordon

President of the University

*

CONFERRING OF DEGREES ON CANDIDATES

*Presented by Allyn W. Kimball,
Dean, Faculty of Arts and Sciences*

BACHELORS OF ARTS

BACHELORS OF ENGINEERING SCIENCE

ORDER OF EVENTS

CONFERRING OF DEGREES ON CANDIDATES

Continued

*Presented by Richard A. Mumma,
Dean, Evening College*

BACHELORS OF SCIENCE • BACHELORS OF SCIENCE IN NURSING
BACHELORS OF SCIENCE IN ENGINEERING
MASTERS OF SCIENCE IN ENGINEERING
MASTERS OF SCIENCE • MASTERS OF EDUCATION
MASTERS OF LIBERAL ARTS
CERTIFICATES OF ADVANCED STUDY IN EDUCATION
* * *

*Presented by John C. Hume
Dean, School of Hygiene and Public Health*

MASTERS OF SCIENCE • DOCTORS OF SCIENCE
MASTERS OF PUBLIC HEALTH • DOCTORS OF PUBLIC HEALTH
DOCTORS OF PHILOSOPHY
* * *

*Presented by Francis O. Wilcox,
Dean, School of Advanced International Studies*

MASTERS OF ARTS
DOCTORS OF PHILOSOPHY
* * *

*Presented by Thomas B. Turner,
Dean, School of Medicine*

DOCTORS OF MEDICINE
MASTERS OF ARTS • DOCTORS OF PHILOSOPHY
* * *

*Presented by Allyn W. Kimball,
Dean, Faculty of Arts and Sciences*

MASTERS OF SCIENCE IN ENGINEERING • DOCTOR OF ENGINEERING
MASTERS OF ARTS IN TEACHING • MASTERS OF ARTS
DOCTORS OF PHILOSOPHY
* * *

CONCLUDING REMARKS

*Lincoln Gordon
President of the University*

*

BENEDICTION

*

RECESSIONAL

THE CORONATION MARCH G. MEYERBEER

*The audience is requested to remain standing after the Benediction until
the members of the faculties and the graduates have left the area.*

The Alumni Association of The Johns Hopkins University invites all graduates, their relatives and friends, and the members of the faculties to attend a reception on Keyser Quadrangle immediately following the recessional. In case of rain, the reception will be held in Levering Hall.

AWARDS

The Sarah and Adolph Roseman Achievement Award in Chemistry in recognition of outstanding accomplishment.

Awarded to: JOSEPH E. AHNELL

The C. Richard Martin Award in Political Economy for outstanding work by a first or second year graduate student.

Awarded to: ROBERT VAN ORDER

The Julius Turner Award for the best senior thesis in Political Science.

Awarded to: RONALD KATZ

*

THE UNIVERSITY MACE

The University Mace carried by the Chief Marshal, Professor ALFRED D. CHANDLER, was first used at the 1954 Commemoration Day Exercises. Eight symbols are hand wrought in sterling silver on an ebony staff. The symbols represent man's cultural development from ancient times, through the Middle Ages and the Renaissance, to the modern era.

THE PRESIDENTIAL INSIGNIA

University President LINCOLN GORDON is wearing the Presidential Insignia signifying the authority vested in the President by the Board of Trustees. It is a chain of sterling silver links worn around the neck. Portraits of each of the nine Johns Hopkins University presidents are engraved on the faces of nine of the links. On the reverse are engraved the names and dates of office of each President. Eleven blank links for future use are included. The University Seal completes the design.

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 WILLIAM MICHAEL SWARTZ, of Schenectady, N. Y.
 JOHN JACKSON SWEENEY, of Topeka, Kan.
 RICHARD MICHAEL SWIDERSKI, of Naugatuck, Conn.
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 BYRON LESLIE WARREN, of Baltimore, Md.
 DONALD STEVEN WEINBERG, of Flushing, N. Y.
 CHARLES J. WEINRAUB, of Fort Wayne, Ind.
 JAMES DAVID WERNER, Jr., of Chatham, N. J.
 JAMES KIMBALL WESTON, of Hyattsville, Md.
 JON DAVID WESTON, of Wheaton, Md.
 STEPHEN FRAZIER WETHERILL, of Haddonfield, N. J.
 HENRY HUGH WHALEY, of Annapolis, Md.
 DAVID GEORGE WHITMORE, of Baltimore, Md.
 MICHAEL DUPUY WICK, of Darien, Conn.
 GEORGE LAFAYETTE WOOD, of Baltimore, Md.
 HENRY CHANG-LIEN YANG, of New York, N. Y.
 DOUGLAS FELIPE YRIART, of Montevideo, Uruguay
 STEVEN THOMAS ZALESAK, of Takoma Park, Md.
 NEIL PETER ZAUBER, of Ventnor City, N. J.
 PAUL EDMUND ZIMANSKY, of Iowa City, Iowa
 JACK ZYROFF, of Duluth, Minn.

(366)

BACHELORS OF ENGINEERING SCIENCE

THOMAS LEACH ADAMS, of Aberdeen, Md.
 THOMAS CHRISTOPHER ADDISON, of Ellicott City, Md.
 FRANCIS BERNARD ALT, of Baltimore, Md.
 FRED JOSEPH BADIK, of Atlantic City, N. J.
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 JANIS BERZINS, Jr., of Baltimore, Md.
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 PAUL EDWARD GORMLEY, of Baltimore, Md.
 EDWIN FLESSNER HART, of Baltimore, Md.

WILLIAM HANCOCK HILDEBRANDT, of Baltimore, Md.
 OTIS WILLIAM HUSTON, of Baltimore, Md.
 LARRY FREDERICK JOHNSON, of Baltimore, Md.
 GREGORY PHILIP LENTZ, of Timonium, Md.
 VILIS IVARS LIETUVIETIS, of Portland, Ore.
 JAMES COLUMBUS LOGAN, of Baltimore, Md.
 DAVID ERNEST MARR, of Damascus, Md.
 JAMES REGESTER MEGINNISS, of Towson, Md.
 RICHARD PAUL MIED, of Kingsville, Md.
 ARTHUR FREDERICK MILLER, of Baltimore, Md.
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 CHARLES BENARD PUGH, Jr., of Baltimore, Md.
 WILLIAM THOMAS PULLIN, Jr., of Baltimore, Md.
 ROBERT EDMUND REGNA, of Englewood Cliffs, N. J.
 LAZAROS VASSILIOS SAKELLARIOU, of Athens, Greece
 GARY WAYNE SECREST, of Ellicott City, Md.
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 DENNIS CHARLES SMITH, of Lutherville, Md.
 THOMAS CRAIG SMITH, of Federalsburg, Md.
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 ROBERT LAWRENCE STEVENSON, of Baltimore, Md.
 JAMES WILLIAM STONE, Jr., of Hagerstown, Md.
 THOMAS HENRY TARCAZ, of Baltimore, Md.
 KENNETH JOSEPH VERDECCHIA, of Baltimore, Md.
 DONALD DENTON WAGAMAN, Jr., of Pen Mar, Pa.
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 ROBERT ALLAN YOUNKIN, of Baltimore, Md.

(58)

*Graduating with Departmental Honors
in Arts and Sciences and Engineering Science*

THOMAS CHRISTOPHER ADDISON	Electrical Engineering	WILLIAM EDWARD MCCLINTOCK	Physics
RONALD MITCHELL BITZER	International Studies	JAMES REGESTER MEGINNISS	Mechanics
BENNETT EARL BOZARTH	Political Science	JOSEPH DAVID PECKERMAN	History
ALAN BRENNER	Chemistry	DWIGHT CHARLES PETERSON	Classics
STEPHEN JEFFREY BROWNE	Political Economy	MARTIN HILLSON RAY	International Studies
JAMES PORTER BUCHANAN	Psychology	WILLIAM A. REINSCH	International Studies
DAVID ABRAM BUCHDAHL	Philosophy	ALAN PAUL SCHAUM	Physics
JOSEPH AUGUST CHURCH	Biology	JERALD SYDNEY SCHWARZ	Mathematics
ROSS FRANK CONNER	Psychology	HENRY DAVID SHAPIRO	Mathematics
DENNIS ROBERT CRYER	Biology	TIMOTHY DANIEL SHEEHAN, JR.	Psychology
CLIFFORD ROBERT CYR	Chemistry	LOUIS ERNEST SLESIN	Chemistry
PETER ROBERT FELD	Psychology	MARK L. STEINBERG	History
THOMAS MELVIN FOUST	International Studies	RICHARD MICHAEL SWIDERSKI	Romance Languages
EDWARD HENRY FRIEDEL	International Studies	DAVID ALLEN TREASURE	History
PAUL EDWARD GORMLEY	Electrical Engineering	MARK VERNON TYLER III	Physics
EDWIN FLESSNER HART	Electrical Engineering	JOHN MICHAEL TYSON	Physics
WARREN RICHARD ISOM	History	STEVEN THOMAS ZALESAK	Physics
RONALD SCOTT KATZ	Political Science	PAUL EDMUND ZIMANSKY	Classics
ROBERT LANCASTER LUCKE	Physics		

*Graduating with General Honors
in Arts and Sciences and Engineering Science*

THOMAS CHRISTOPHER ADDISON	JOHN MARTIN GLYN
STUART PHILLIP ADLER	PAUL EDWARD GORMLEY
WILLIAM RANDALL ALBURY	KENNETH SCOTT GUMMERSON
RONALD MITCHELL BITZER	EDWIN FLESSNER HART
WILLIAM JAMES BOETTINGER	JOHN TAYLOR HAYFORD, JR.
ALBERT EDWARD BOTHE, JR.	THOMAS ROBERT HEALY
BENNETT EARL BOZARTH	WARREN RICHARD ISOM
KERRY VAUGHN BRACE	RICHARD JOEL KAPLAN
ALAN BRENNER	RONALD SCOTT KATZ
STEPHEN JEFFREY BROWNE	ANNA-LUISE KATZENSTEIN
JAMES PORTER BUCHANAN	ARTHUR PRESTON KOWELL
DAVID ABRAM BUCHDAHL	HARVEY NATHAN KRANZLER
ROBERT LEE BUTLER	WILL HARLEY LANE
LOUIS JAMES CALL, JR.	ROBERT MICHAEL LEADON
ROSS FRANK CONNER	ALEXANDER INGERSOLL LEWIS III
CLIFFORD ROBERT CYR	LAWRENCE DAVID LEWIS
DAVID ALLEN DOOLEY	NEIL HOWARD LOVE
PETER ROBERT FELD	ROBERT LANCASTER LUCKE
DAIL L. FIELDS	RISA BERMAN MANN
THOMAS MELVIN FOUST	JOHN WALTER MARLOW
DANIEL C. FREY	PETER CRAIG MARTINDALE
EDWARD HENRY FRIEDEL	JAMES REGESTER MEGINNISS
WALLACE BRUCE FYE	RICHARD LYNN MENTZER, JR.
MAURICE KENT GATELY	GREGORY CHARLES MEYER
ALAN HOWARD GILBERT	MICHAEL GARY MICHAELSON
RONALD LAWRENCE GINSBERG	NORMAN DEAN MIRSKY

STEPHEN JAMES MOHR
 RICHARD CARROLL MOORE, Jr.
 JACK EDWARD NISSIM
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 DWIGHT CHARLES PETERSON
 WILLIAM T. POTTS
 WILLIAM A. REINSCH
 BRUCE LEE RESNIK
 DAVID M. ROSENFELD
 ALAN PAUL SCHAUM
 ROBERT FRANK SCHEIBLE
 THOMAS ROEGER SCHMUEHL
 JERALD SYDNEY SCHWARZ
 MICHAEL ALLEN SHANOFF
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 TIMOTHY DANIEL SHEEHAN, Jr.

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 MARK L. STEINBERG
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 RICHARD MICHAEL SWIDERSKI
 BERNARD TAWFIK
 DAVID HOUGHTON TOMLIN
 DAVID ALLEN TREASURE
 ALEC LEONARD TURK
 MARK VERNON TYLER III
 JOHN MICHAEL TYSON
 HENRY CHANG-LIEN YANG
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SUSAN ALBERT, of Baltimore, Md.
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 WILLIAM FOX BRYAN, of Forest Hill, Md.
 STANLEY BURIK, of Linthicum, Md.
 TOMÁS CHAO GALDO, of Havana, Cuba
 WILLIAM DOYLE CHERRY, of Greenbelt, Md.
 GOFF CLARK COCHRAN, Jr., of Baltimore, Md.
 JOHN MARTIN CONELIUS, Jr., of Baltimore, Md.
 PHILIP BIRCH COULTER, of Baltimore, Md.
 JOHN HENRY COX, Jr., of Timonium, Md.
 JOHN VINCENT CUCINA, of Baltimore, Md.
 DANIEL BARRY CURTIS, of Baltimore, Md.
 MARGUERITE DOROTHEA DENBURG, of Baltimore, Md.
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 EARL JOSEPH DOTTERWEICH, of Baltimore, Md.
 RUTH ANNA MAE EBERLE, of Baltimore, Md.
 ANN POSEY EGERTON, of Baltimore, Md.
 GEORGE VINCENT FIALKOWSKI, of Baltimore, Md.
 RICHARD STANLEY FINLAY, of Glen Burnie, Md.
 JACK R. FISHER, of Baltimore, Md.
 NORMAN JOHN FOSLER, of Baltimore, Md.
 EDWARD EVERETT FOWLER, of Baltimore, Md.
 ALBERT DOV FRIEDBERG, of Baltimore, Md.
 EDGAR CHARLES FRITSCHÉ, of Baltimore, Md.
 GEOFFREY LEE FULLER, of Baltimore, Md.
 ALLAN JOSEPH GIBBER, of Monticello, N. Y.

JANET LOUISE GOEMBEL, of Baltimore, Md.
 BLANCHE WOLFSON GOREN, of Baltimore, Md.
 KATHRYN FRANCES GORMAN, of Baltimore, Md.
 DAGMAR SCHERER GRIMM, of Baltimore, Md.
 GARTH EUGENE GROFT, of York, Pa.
 JEAN HALE, of Baltimore, Md.
 MARY NEMURAS HARRINGTON, of Baltimore, Md.
 NORMAN LOUIS HAYMIRE, of Baltimore, Md.
 KATHARINE RUSSUM HERBERT, of Baltimore, Md.
 FRANK HNAT, of Baltimore, Md.
 STUART HOFFMAN, of Baltimore, Md.
 B. I. MONICA HOLMSTROM, of Baltimore, Md.
 BARBARA SELIS HORTON, of Baltimore, Md.
 SHIRLEY ANN HUTCHISON, of Baltimore, Md.
 SHIRLEY ANN KIEFER, of Baltimore, Md.
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 JOHN MARTIN KOBYLARZ, Jr., of Baltimore, Md.
 ERNEST HENRY KOEHLER, of Lutherville, Md.
 WALTER LOUIS KOEHLER, of Baltimore, Md.
 WILLIAM LEONARD LAFORCE, Jr., of Baltimore, Md.
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 VERNON JOHN LEUBECKER, of Laurel, Md.
 JOHN BAKER ROACH LONG, Jr., of Baltimore, Md.
 ELEANOR SKOVRON LUTZKER, of Baltimore, Md.
 MICHAEL JAY MADDEN, of Baltimore, Md.
 MICKEY OMAR MARSHALL, of Laurel, Md.
 EDMUND JAMES MCCARTHY, of Baltimore, Md.
 CHARLES EVERETT MERRICK III, of Baltimore, Md.
 BRENDA LOUISE MICHAEL, of Aberdeen, Md.
 CARROLL GREGORY MILLER, of Baltimore, Md.
 JIMMIE ANDERSON MILLER, of Glen Burnie, Md.
 PHILIP JOSEPH MILLER, of Baltimore, Md.
 WILLIAM HENRY MUSGROVE, of Baltimore, Md.
 MARGUERITE BRACELAND NUSSBAUM, of Baltimore, Md.
 RICHARD FRANCIS OLES, of Baltimore, Md.
 WILLIAM ELMER OSMEYER, of Baltimore, Md.
 EDWARD MAGRUDER PASSANO, Jr., Baltimore, Md.

WILLIAM ALLEN PECK, of Baltimore, Md.
 GRACE ANTOINETTE PIPITONE, of Baltimore, Md.
 FRANCES DAVIS POLLARD, of Baltimore, Md.
 RICHARD DESHER PRIDDEY, of Baltimore, Md.
 ANNE NILES PRIMROSE, Gibson Island, Md.
 WOLFRAM RADLOFF, of Baltimore, Md.
 KENNETH HERMAN RAINE, of Baltimore, Md.
 JUDITH MEREDITH REICHARD, of Reisterstown, Md.
 ALVARO RODRIGUEZ, of Baltimore, Md.
 MARGO RIEGNER RUBIN, of Baltimore, Md.
 NED EARLE RUBIN, of Baltimore, Md.
 JOCELYN FREY ST. CLAIR, of Jarrattsville, Md.
 FREDERICK JOHN SASSE, Jr., of Linthicum, Md.
 PHILIP HENRY SCHARPER, of Baltimore, Md.
 LEAH KAUSCH SCHLENKER, of Baltimore, Md.
 MARY LYNNE SCHMIDT, of Baltimore, Md.
 RAYMOND MARTIN SCHULMEYER, of Baltimore, Md.
 WILLIAM HARRY SCHWARZ, of Severna Park, Md.
 WILLIAM HENRY SELL, of Hydes, Md.
 EDGAR BROWN SELLERS III, of Baltimore, Md.
 JAMES WILBUR SHAEFFER, Jr., of Gyndon, Md.
 THOMAS JEFFERSON SHOFF, Jr., of Baltimore, Md.

SAMUEL HENRY SHRIVER, Jr., of Lutherville, Md.
 HOWARD HENRY SINOFSKY, of Randallstown, Md.
 RONALD THOMAS STEVENSON, of Baltimore, Md.
 JOHN JAMES SWEITZER, of Baltimore, Md.
 WILSON RYSANEK TOULA, of Baltimore, Md.
 BRIAN PATRICK VARACALLE, of Ellicott City, Md.
 WALTER F. VON FRICKEN, of Baltimore, Md.
 LITTLE LANNY WALKER, of Baltimore, Md.
 HARVEY EDWIN WALTERS, of Baltimore, Md.
 HOWARD HOGE WARNER, of Baltimore, Md.
 CHARLES MARVIN WATERMAN, of Baltimore, Md.
 JOSEPH MICHAEL WETCHY, of Baltimore, Md.
 JERRY LEE WHEELER, of Riverdale, Md.
 EDWARD GENE WHITAKER, of Baltimore, Md.
 EDWARD BLAKE WHITE III, of Severn, Md.
 GEORGE FREDERICK WHITLOCK, Jr., of Upperco, Md.
 JACQUELINE RIXON WILLIAMS, of Baltimore, Md.
 STANLEY ARCHER WILSON, of Baltimore, Md.
 ALBERT RUDOLPH WINKLER, of Baltimore, Md.
 WILLIAM LOWE WRIGHTSON, Jr., of Trappe, Md.
 KARL MORTON YATOVITZ, of Baltimore, Md.
 VERNON BROOKE YEICH, of Parkton, Md.

(118)

Graduating with Honors

LEROY FRANCIS BLADES
 NANCY MACCUBBIN BOSSERT
 LEAH KOPPELMAN BONOVICH
 MONICA B. I. HOLMSTROM
 SHIRLES ANN S. KIFER
 ERNEST HENRY KOEHLER
 MARGUERITE BRACELAND NUSSBAUM

ALVARO RODRIGUEZ
 MARGO GENEVA R. RUBIN
 NED EARLE RUBIN
 JOCELYN F. ST. CLAIR
 PHILIP HENRY SCHARPER
 JOHN JAMES SWEITZER
 WILLIAM LOWE WRIGHTSON

BACHELORS OF SCIENCE IN NURSING

JUDITH FRANKLIN CAMPBELL, of Baltimore, Md.
 KRISTINE HAINES, of East Leroy, Mich.
 BEVERLY PRIEST MCWILLIAMS, of Sykesville, Md.

JANET STIVARIUS SMOLINSKY, of Ames, Iowa
 KAREN PURIN THOMAS, of Baltimore, Md.

(5)

BACHELORS OF SCIENCE IN ENGINEERING

LAMBERT ROBERT ALBRECHT, of Joppa, Md.
 THOMAS ANTHONY ANASTASIO, of Glen Burnie, Md.
 RALPH HENRY BEAM, Jr., of Glen Burnie, Md.
 NORMAN EARL BELL, of Baltimore, Md.
 RONALD JAY BENDER, of Baltimore, Md.
 KARL BERGMANN, Jr., of Baltimore, Md.
 JOSEPH GERARD BIENLEIN, of Baltimore, Md.
 WALTER VLADIMIR BILLIN, of Ellicott City, Md.
 DONALD LEE BOYLAN, of Baltimore, Md.
 CEDRIC FARLOW BRADLEY, of Baltimore, Md.
 JEROME LEROY BRADLEY, of Baltimore, Md.
 CONRAD BROWN, of Baltimore, Md.
 MATTHEW JOHN BROWN, of Severna Park, Md.

WILLIAM CHARLES BRUNS, of Baltimore, Md.
 PATRICK JOSEPH CALLAHAN, of Baltimore, Md.
 DONALD CHARLES CANNATA, of Baltimore, Md.
 DAVID RICHARD CAREY, of Frederick, Md.
 MICHAEL DAVID CARNEY, of Baltimore, Md.
 GERALD NEAL CARRICK, of Baltimore, Md.
 DOMINIC LOUIS CONOSCENTI, of Baltimore, Md.
 GEORGE WILBUR COWMAN, of Baltimore, Md.
 UTON NORMAN DELLOSSO, Jr., of Reisterstown, Md.
 ANTHONY THOMAS DiFURIO, of Baltimore, Md.
 LOUIS SAMUEL DiMARINO, Jr., of Baltimore, Md.
 RICHARD WILLIAM DOYLE, of Timonium, Md.
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 JON MYLNE FILES, of Baltimore, Md.
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 JOHN CHARLES FLECKENSTEIN, of Joppa, Md.
 CHARLES WILLIAM FLICHMAN III, of Baltimore, Md.
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 HARRY KENNETH FROME, of Baltimore, Md.
 FREDERICK DAVID GAVIN, JR., of Baltimore, Md.
 STANLEY TODD GIBBONS, of Baltimore, Md.
 WALTER DANIEL GOLDS, of Baltimore, Md.
 WILLIAM THEODORE THOMAS GRAY, of Wheaton, Md.
 SIDNEY GROLLMAN, of Baltimore, Md.
 CURTIS LEE GRUBB, of Sykesville, Md.
 RAYMOND ANTHONY GUTOSKI, of Baltimore, Md.
 JACK LEROY HALSOR, of Baltimore, Md.
 WILLIAM DOUGLAS HAMILTON, of Baltimore, Md.
 RAYMOND JAMES HARRINGTON, Owings Mills, Md.
 CARLTON HASLBECK, of Linthicum Heights, Md.
 DENNIS ANDREW HAWKINS, of Baltimore, Md.
 OTHO JAMES HAYNIE, JR., of Baltimore, Md.
 PAUL FRANCIS HEMLER, JR., of Baltimore, Md.
 ALBERT ROY HILBINGER, of Cockeysville, Md.
 GEORGE HENRY HOOK, of Glen Burnie, Md.
 CRAIG WALLACE IRWIN, of Jackson, Miss.
 SAMUEL MADDOX JENKINS III, of Timonium, Md.
 DALE LEROY JENNINGS, of Baltimore, Md.
 CHARLES EDWARD JONES, of Glen Burnie, Md.
 EDWARD FRANCIS KAMINSKI, of Glen Burnie, Md.
 JAMES RAY KANEY, of Bel Air, Md.
 ALAN MICHAEL KASINOFF, of Baltimore, Md.
 ANTHONY MILTON KAWALEK, of Baltimore, Md.
 LAWRASON LEE KENT, of Lutherville, Md.
 JAMES THORNTON KNIGHT, JR., of Baltimore, Md.
 MICHAEL CHARLES KNOTT, of Baltimore, Md.
 JACOB JOSEPH KOVACS, JR., of Baltimore, Md.
 JAMES CLAIR LARSON, of Severna Park, Md.
 ANDREW JOHN LAWRENCE, of Baltimore, Md.
 RICHARD MILTON LEPSON, of Baltimore, Md.
 JOSEPH LEO LEWIS, of Timonium, Md.
 LEE JOSEPH MANNING, of Frederick, Md.
 JOSEPH HOWARD MATTHEWS, of Baltimore, Md.
 DANIEL BRINTON MAUK, JR., of Fallston, Md.
 ROBERT SHERMAN MCKEEN, of Baltimore, Md.
 JOHN EARL MCQUADE, JR., of Baltimore, Md.
 DAVID MIDDLEMAN, of Baltimore, Md.
 RAYMOND AUGUST MILLER, of Ellicott City, Md.

JAMES LEONARD MONAHAN, of Baltimore, Md.
 JACK GILBERT NASH, of Baltimore, Md.
 WHEELER HIRAM NEWCOMB, JR., of Long Green, Md.
 WILLIAM LEO O'KEEFE, of Baltimore, Md.
 OTTO JOSEPH OLLINGER, JR., of Baltimore, Md.
 PAUL STEPHEN OLSAVSKY, of Pasadena, Md.
 ADRIAN RAY PARRACK, JR., of Baltimore, Md.
 JAMES RUSSELL PAZOUREK, of Baltimore, Md.
 JAMES TROVILLA PETERS, of Baltimore, Md.
 DONALD MILLARD PLATT, of Baltimore, Md.
 ALLAN BERNARD POSNER, of Baltimore, Md.
 JOHN ARTHUR POUBLON, of Baltimore, Md.
 PAUL PHILLIP RAGONESE, of Baltimore, Md.
 HARRY WESLEY REAMER, of Glen Burnie, Md.
 FREDERICK JOHN REICH, of Baltimore, Md.
 JOHN FRANKLIN REID, of Baltimore, Md.
 MICHAEL JOHN RICHARDSON, of Baltimore, Md.
 JAMES THOMAS ROEDER, of Cockeysville, Md.
 RICHARD GEORGE ROEDER, of Glen Burnie, Md.
 ROWLAND MAURICE RUSHWORTH, of Glen Arm, Md.
 CHARLES LESLIE SALTER, of Bel Air, Md.
 EDWARD HENRY SCHULTZ, JR., of Baltimore, Md.
 E. ROBERT SEITZ, of Baltimore, Md.
 GLENDON ROSS SHAFFER, JR., of Glen Burnie, Md.
 JAMES ROLAND SHIRLEY, of Laurel, Md.
 WILLIAM OTTO SILLER, of Baltimore, Md.
 FRANCIS HAMILTON SIMPSON, of Baltimore, Md.
 MICHAEL SINUTKO, JR., of Glen Burnie, Md.
 JAMES DALE SKROUPA, of Ellicott City, Md.
 ROBERT LOUIS SPECHT, of Glen Burnie, Md.
 ROBERT BRADLEY SPROW, of Baltimore, Md.
 FRANCIS PAUL STEFANIK, of Baltimore, Md.
 RONALD GEORGE STEIGERWALD, of Baltimore, Md.
 RICHARD FRANKLIN SYDNOR, of Laurel, Md.
 VYTAUTAS ANTANAS TREIDERIS, of Baltimore, Md.
 DENNIS SHERWOOD TUDAY, of Baltimore, Md.
 GERMAN ALEJO VANEGAS, of Baltimore, Md.
 MARIUS VOGELFANGER, of Baltimore, Md.
 RUDOLF ROBERT WALTER, of Baltimore, Md.
 ROBERT EDWARD WALTERS, of Lutherville, Md.
 GERALD RAYMOND WATSON, of Bowie, Md.
 RONALD RAY WATTS, of Baltimore, Md.
 JOSEPH RICHARD WEGER, of Baltimore, Md.
 DAVID GEORGE WEIFENBACH, of Baltimore, Md.
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(120)

Graduating with Honors

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ADRIAN RAY PARRACK, JR.
 ALLAN BERNARD POSNER
 FREDERICK JOHN REICH
 EDWARD HENRY SCHULZ, JR.
 ROBERT BRADLEY SPROW
 GERALD RAYMOND WATSON

MASTERS OF SCIENCE IN ENGINEERING

*in the Evening College
with titles of essays*

GEROLD ERNEST DEHM, of Severna Park, Md., B. E. E. University of Florida, 1955. Electrical Engineering.
Data Acquisition, Reduction and Analysis for the Applications Technology Satellite Communications System.

MICHAEL J. HORROCKS, of Baltimore, Md., B. Sc. Northampton Engineering College, London, 1958. Electrical Engineering.
Circular Polarization.

HERMAN DAVID RAYNES, of Baltimore, Md., B. E. E. Georgia Institute of Technology, 1948. Electrical Engineering.
A New Model of the Predictive Mechanism of the Eye.

(3)

MASTERS OF SCIENCE

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RAYMOND MARTIN AKERSON, JR., of Glen Burnie, Md., B. S. E. E. Worcester Polytechnic Institute, 1963. Electrical Engineering.

CARL FRANK ANDREN, of Laurel, Md., B. E. Stevens Institute of Technology, 1962. Electrical Engineering.

EDWARD FLORIAN APPLEBY, JR., of Baltimore, Md., B. E. S. The Johns Hopkins University, 1961. Electrical Engineering.

ARMAND ARTHUR BILODEAU, of Annapolis, Md., B. S. United States Naval Academy, 1952; B. S. E. The Johns Hopkins University, 1960. Management Science.

CHARLES VALE BITTERLI, of Ellicott City, Md., B. S. Loyola College, 1943. Numerical Science.

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ANGELA MARIE BOYTER, of Ellicott City, Md., A. B. Goucher College, 1964. Numerical Science.

NANCY BONNEY BRYAN, of Baltimore, Md., B. A., University of Delaware, 1964. Management Science.

JOSEPH BATES BURK, of Baltimore, Md., B. S. E. The Johns Hopkins University, 1963. Management Science.

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JOHN WILLIAM DOZIER, of Baldwin, Md., B. S. E. The Johns Hopkins University, 1961. Electrical Engineering.

RICHARD DONALD FABER, of Adelphi, Md., B. S. E. E. Ohio State University, 1966. Numerical Science.

JOHN WILLIAM FARRELL, of Baltimore, Md., A. B. Loyola College, 1953. Management Science.

CHARLES HENRY FISCHBACH, JR., of Linthicum, B. S. E. The Johns Hopkins University, 1961. Electrical Engineering.

ERNEST HARVEY FORMAN, of Aberdeen, Md., B. S. University of Rochester, 1964. Management Science.

WILLIAM ANTHONY GECKLE, JR., of Linthicum Heights, Md., B. S. E. The Johns Hopkins University, 1960. Electrical Engineering.

HAROLD GINSBERG, of Silver Spring, Md., B. S. A. E. Boston University, 1959; M. S. A. E. University of Maryland, 1965. Numerical Science.

HOWARD STEWART GINSBERG, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1963. Electrical Engineering.

- ROY MOYER GULICK, Jr., of Annapolis, Md., B.S. United States Naval Academy, 1956; B.S.E.E. United States Naval Postgraduate School, 1966. Electrical Engineering.
- RICHARD ARNOLD GUNTER, of Silver Spring, Md., B.S. Duke University, 1965. Numerical Science.
- STANLEY BERNARD HANSON, of Laurel, Md., B.A. St. Mary's College, 1955; M.S. University of Notre Dame, 1965. Numerical Science.
- RAYMOND LEWIS HARRIS, Jr., of Ellicott City, Md., B.E.S. The Johns Hopkins University, 1961. Electrical Engineering.
- ARTHUR RAMON HARVEY, of Baltimore, Md., B.S.E.E. Purdue University, 1960. Electrical Engineering.
- DONALD WILLIAM HEARN, of Baltimore, Md., A.B. University of North Carolina, 1961. Management Science.
- ARDEN RUDOLPH HELLAND, of Pasadena, Md., B.S. North Dakota State University, 1960. Management Science.
- DAVID HENRY HIGINBOTHAM, of Laurel, Md., B.S.E.E. Pennsylvania State University, 1962. Numerical Science.
- HERBERT HARRY HOCHHALTER, of Baltimore, Md., B.S.E. The Johns Hopkins University, 1961. Electrical Engineering.
- MANFRED KAUFMANN, of Baltimore, Md., B.S.E. (Ind.) The Johns Hopkins University, 1956; B.S.E. (Mech.), 1961. Management Science.
- EDWARD JOSEPH KELLY, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1956; M.A.T., 1962. Physics. Prediction of the Magnetic Properties of Thin Films of Normally Ferromagnetic Materials.
- MOLLY BROWN KELLY, of Washington, D.C., B.A. Vanderbilt University, 1964. Numerical Science.
- ADRIENNE JOY KLEIBOEMER, of Silver Spring, Md., B.S. University of Chicago, 1962. Numerical Science.
- DENNIS CRAIG KOZLOWSKI, of Annapolis, Md., B.S.E.E. Lehigh University, 1964. Electrical Engineering.
- JOHN KENNETH KRONIMUS, of Bladensburg, Md., B.S. University of Florida, 1965. Numerical Science.
- JULES IVAN LEVINE, of Baltimore, Md., B.E.E. University of Virginia, 1960. Management Science.
- ARK LEE LEW, of Baltimore, Md., B.S.E.E. Case Institute of Technology, 1963. Electrical Engineering.
- LEONARD LIEB, Jr., of Baltimore, Md., B.S.E.E. Drexel Institute of Technology, 1962. Electrical Engineering.
- JOSEPH FRANCIS LUDFORD, of Bowie, Md., B.E.E. Manhattan College, 1958. Management Science.
- ROBERT WARREN LYTLE, of Laurel, Md., B.A. Susquehanna University, 1965. Numerical Science.
- PAUL CHARLES MARTH, Jr., of Takoma Park, Md., B.E.S. The Johns Hopkins University, 1961. Electrical Engineering.
- GARY ERVIN MARX, of Salt Lake City, Utah, B.S.E.E. University of Utah, 1964. Electrical Engineering.
- GARY NORMAN MATUCK, of Ellicott City, Md., B.S. Virginia Polytechnic Institute, 1965. Numerical Science.
- WILLIAM RAND McCORMACK, of Ellicott City, Md., B.S. The University of Maryland, 1950. Management Science.
- EDWARD FRANCIS MEINECKE, of Baltimore, Md., B.S.E. The Johns Hopkins University, 1963. Electrical Engineering.
- RAYMOND HENRY MILKMAN, of Beltsville, Md., B.E.S. The Johns Hopkins University, 1965. Management Science.
- JAMES SAMUEL MILLER, of Beltsville, Md., B.S.E.E. Christian Brothers College, 1964. Electrical Engineering.
- EUGENE MICHAEL MOLCZAN, of Pittsburgh, Pa., B.S. in Physics University of Virginia, 1963. Physics. Elements of Atomic Structure Computations.
- ELMER ELLIS MOORING, Jr., of Rockville, Md., B.S.E.E. Texas A & M University, 1963. Electrical Engineering.
- ORVILLE BENTON MOTT, of Baltimore, Md., B.S. University of Missouri, 1943; M.S., 1953. Electrical Engineering.
- CARL W. NELSON III, of Bristol, Pa., B.S.E.E. Drexel Institute of Technology, 1963. Electrical Engineering.
- DONALD EDWARD NEUDECKER, of Leesburg, Va., B.S.E. The Johns Hopkins University, 1961. Electrical Engineering.
- DONALD JOSEPH O'BRIEN, of Silver Spring, Md., B.S. Pennsylvania State University, 1958. Electrical Engineering.
- ROBERT FREDERICK PLATTE, of Laurel, Md., B.S.E.E. Lafayette College, 1964. Electrical Engineering.
- DORN ARWIN QUESINBERRY, of Glen Burnie, Md., B.S.E. The Johns Hopkins University, 1963. Electrical Engineering.
- FRANCIS RACHAL, of Baltimore, Md. B.S.E.E. Southern University, 1956. Electrical Engineering.
- BRUCE MERTIN REID, of Ellicott City, Md., B.S.E.E. Milwaukee School of Engineering, 1963. Electrical Engineering.
- A. LANDIS RILEY, of Ellicott City, Md., B.E.S. The Johns Hopkins University, 1963. Electrical Engineering.
- SHELDON ALLEN RUDIE, of Baltimore, Md., B.S. The University of Maryland, 1958. Numerical Science.
- GEORGE GERARD RUPPERT, of Baltimore, Md., B.S.E. The Johns Hopkins University, 1964. Management Science.
- FRANK ANTHONY RUSSO, of Timonium, Md., B.E.S. New York University, 1957; M.S. Massachusetts Institute of Technology, 1958. Management Science.
- MIGUEL ESTEBAN SAINZ, of Baltimore, Md., B.S.E. The Johns Hopkins University, 1964. Electrical Engineering.
- WILLIAM GILMORE SCOTT III, of Baltimore, Md., B.S. The Johns Hopkins University, 1965. Management Science.

- EDWIN ARTHUR SHEARIN, of Baltimore, Md., B. S. North Carolina State College, 1960. Electrical Engineering.
- JOHN NEILSON SIGLER, of Baltimore, Md., A. B. Princeton University, 1965. Management Science.
- WILLIAM ALBERT SMALL, JR., of Ellicott City, Md., B. S. Loyola College, 1961. Electrical Engineering.
- MICHAEL PATRICK SMYTH, of Greenbelt, Md., B. S. Iona College, 1966. Numerical Science.
- PHILIP REID SODERGREN, of Pikesville, Md., B. S. E. E. University of Maryland, 1964. Electrical Engineering.
- THOMAS RAYMOND STACK, of Laurel, Md., B. A. LaSalle College, 1965. Numerical Science.
- NIAL EUGENE STODDER, of Kokomo, Ind., B. S. Miami University, 1962. Physics.
Measurement of the Temperature Dependence of the Indices of Refraction of Ammonium Dihydrogen Phosphate.
- FRED URI SULMER, of Pikesville, Md., B. S. E. E. City College of New York, 1956. Management Science.
- JOHN LEONARD SUNDRY, of Baltimore, Md., B. S. E. E. Carnegie Institute of Technology, 1958. Electrical Engineering.
- ROBERT ARCHER SWANSON, of Baltimore, Md., B. S. in M. E. Duke University, 1960. Management Science.
- MORRIS MELVIN TAMRES, of Parkville, Md., B. E. The Johns Hopkins University, 1951; B. S., 1961. Electrical Engineering.
- THOMAS THOMPSON, of Silver Spring, Md., B. S. E. E. Lafayette College, 1960. Electrical Engineering.
- WALTER FRANKLIN TYSINGER, of Bradshaw, Md., B. S. I. E. University of North Carolina, 1963. Management Science.
- JOHN LOUIS VOLK, of Clarksville, Md., B. S. E. E. Valparaiso University, 1965. Numerical Science.
- RUDOLPH CARL WALCH, JR., of Baltimore, Md., B. E. The Johns Hopkins University, 1955. Electrical Engineering.
- WAYNE LEMMON WEIGLE, of Ellicott City, Md., B. S. E. The Johns Hopkins University, 1962. Electrical Engineering.
- EDWARD RICHARD WHALEN, of King George, Va., B. S. St. John's University, N. Y., 1963. Numerical Science.
- JOSEPH RAYMOND ZACCARDI, of Ellicott City, Md., B. S. in E. E. Carnegie Institute of Technology, 1958. Electrical Engineering.

(84)

MASTERS OF EDUCATION

- STANLEY DONALD ANDERSON, JR., of Glen Burnie, Md., B. A. University of the Philippines, 1961.
- STANLEY I. ARONOVITCH, of Randallstown, Md., B. S. Loyola College, 1965.
- ROBERT EDWARD BADENHOOP, of Colora, Md., B. A. Dickinson College, 1957.
- RAYMOND JOHN BARNHARDT, of Center, N. D., B. A. University of North Dakota, 1965.
- ILENE RUTH BOOKE, of Baltimore, Md., B. A. Lake Forest College, 1963.
- BLANCHE JONES BOOKER, of Baltimore, Md., B. A. Morgan State College (Md.), 1964.
- FRANCIS LEO BRANNAN, of Bel Air, Md., B. S. St. Francis College, Pennsylvania, 1961.
- SARAH KROEGER BRIGGS, of Newton Center, Mass., B. A. Wellesley College, 1962.
- ELIZABETH SELLERS BROWN, of Randallstown, Md., B. A. Washington College, 1964.
- LENA IORIO BROWN, of Elkridge, Md., B. S. The Johns Hopkins University, 1964.
- RUTH WINIFRED BRUNYATE, of Baltimore, Md., B. A. Hollins College, 1938.
- PAUL JOSEPH CASHOUR, of Baltimore, Md., B. A. Loyola College, 1965.
- ROBERT ALLEN COHEN, of Baltimore, Md., B. S. Towson State College (Md.), 1958.
- Yael YAROM COHEN, of Afula, Israel, B. A. Hebrew University, 1959.
- JON CHAPMAN CROSBY, of Baltimore, Md., Ph. B. Loyola College, 1949.
- JULIA WINSTON DAVIS, of Baltimore, Md., B. A. Mary Washington College, 1961.
- FAITH BRODSKY DEAN, of Baltimore, Md., B. A. Adelphi College, 1963.
- ROBERT BRICE DEAN, of Bel Air, Md., B. S. in Ed. Salisbury State College (Md.), 1950.
- DAVID LEE EMBLETON, of Glen Burnie, Md., B. S. The Johns Hopkins University, 1963.
- NELL ELIZABETH NORTON EVANS, of Severn, Md., B. S. in Ed. The University of Texas, 1938.
- ANTHONY CARMEN FIORELLO, of Baltimore, Md., B. S. The Johns Hopkins University, 1962.
- MARYCAROLYN GREEN FRANCE, of Baltimore, Md., B. A. Frostburg State College (Md.), 1965.
- MICHAEL ANDREW FRANKO, of Baltimore, Md., B. S. Towson State College (Md.), 1957.
- CHARLOTTE KUPFERER GOTWALD, of York, Pa., B. A. Western College, Ohio, 1957.

- BETTY JANE GRISINGER, of Baltimore, Md., B.S. Towson State College (Md.), 1961.
- BARBARA SCHUYLER HAAS, of Baltimore, Md., B.S. Trenton State College (N.J.), 1945.
- KAMALAVATHY ARTHUR HARRIS, of Baltimore, Md., B.S. University of Madras, 1944; M.A. 1944.
- CAROLYN COLLINS HOES, of Baltimore, Md., B.S. Coppin State College (Md.), 1955.
- DANIEL CARTER HOLSENBECK, of Bainbridge, Md., B.S. Auburn University, 1964.
- GENEVA CONWAY JOHNSON, of Baltimore, Md., B.S. Morgan State College (Md.), 1949.
- IRENE DIXON JOHNSON, of Baltimore, Md., B.A. Howard University, 1954; B.S. Coppin State College (Md.), 1961.
- PENELOPE McMULLAN JOHNSON, of Baltimore, Md., B.A. Gettysburg College, 1965.
- FRED KARLIP, of Baltimore, Md., B.S. Towson State College (Md.), 1965.
- SHIRLEY ELIZABETH KENT, of Baltimore, Md., B.A. Shepherd College, 1958.
- VIRGINIA SMITH MARTIRANO, of Frostburg, Md., B.S. Frostburg State College (Md.), 1960.
- GEORGE HAROLD MAXEY, of Baltimore, Md., B.Mus. Ed., Howard University, 1951.
- IRA GRAYSON MCDANIEL, of Bel Air, Md., B.S. Salisbury State College (Md.), 1965.
- SEDONIA REBECCA MERRITT, of Baltimore, Md., B.S. Coppin State College (Md.), 1954.
- RUTH FINKS MORGAN, of Baltimore, Md., B.S. University of Maryland, 1958.
- SHIRLEY ANNE MORLOK, of Aberdeen, Md., B.S. in Ed. Millersville State College (Pa.), 1950.
- JAMES JOSEPH O'CONNOR, JR., of Baltimore, Md., B.S. in Ed. Mount St. Mary's College, 1959.
- BETSY ANN ORMAN, of Baltimore, Md., B.A. Tufts University, 1963.
- RICHARD ARLEN PERRY, of Piggott, Ark., B.A., Arkansas State College, 1952.
- ELLA MAE SANDERS PHELPS, of Pasadena, Md., B.S. in Ed. University of Maryland, 1965.
- ASALEE JONES PORTEE, of Baltimore, Md., B.S. Coppin State College (Md.), 1962.
- LEE JOYCE RICHMOND, of Baltimore, Md., B.S. S.S. Loyola College, 1961.
- MARGERY DOPKIN SINGER, of Baltimore, Md., B.A. University of Maryland, 1943.
- DONALD REESE SMITH, of Baltimore, Md., B.S. Bethel College, 1962.
- MERLE JAMES SMITH, of Baltimore, Md., B.S. West Virginia State College, 1940.
- SANDRA KING SPEACE, of Ellicott City, Md., B.S. Towson State College (Md.), 1962.
- CHARLES EDWARD STEVENS, JR., of Bel Air, Md., B.S. The Johns Hopkins University, 1964.
- JOAN SIMMONS STEVENSON, of Baltimore, Md., B.S. Coppin State College (Md.), 1954.
- CARL FREDERICK STISSEL, of Baltimore, Md., B.E. The Johns Hopkins University, 1927.
- RALPH JOSEPH TRAUTWEIN, of Baltimore, Md., B.S. Towson State College (Md.), 1962.
- JAMES WILLIAM WALTERS, of Baltimore, Md., B.S. in Ed. Slippery Rock State College (Pa.), 1961.

(55)

MASTERS OF LIBERAL ARTS

- ALICE WILEY ALLEN, of Baltimore, Md., B.S. The Johns Hopkins University, 1939.
- MARY HEINEMAN BALTUS, of Baltimore, Md., B.S. The Johns Hopkins University, 1960.
- RACHEL HOLMES EBERT BENNETT, of Bel Air, Md., A.B. Western Maryland College, 1951.
- NANNETTE TROTT BERBERICH, of Baltimore, Md., B.S. Towson State College (Md.), 1940.
- HELEN MAY BETTON, of Baltimore, Md., B.S. The Johns Hopkins University, 1955.
- JOHN BODNER, JR., of Washington, D.C., LL.B. Northwestern University, 1953.
- MARVIN BRAITERMAN, of Baltimore, Md., LL.B. University of Maryland, 1949.
- MARIE M. BRYAN, of Baltimore, Md., B.S. The Johns Hopkins University, 1954.
- RAYMOND MERRITT BURGISON, of Baltimore, Md., B.S. Loyola College, 1945; Ph.D. University of Maryland, 1950.
- MARY WINTZ COFFAY, of Baltimore, Md., B.A. College of Notre Dame of Maryland, 1946.
- BETTY LEVY COHEN, of Baltimore, Md., A.B. Goucher College, 1965.
- FRANCIS PETER COLEMAN, of Baltimore, Md., B.A. Washington College, 1963.
- STAUROS ANTONIOU DAOUTIS, of Baltimore, Md., B.A. University of Maryland, 1965.
- GERTRUDE CARTON DENABURG, of Baltimore, Md., B.S. University of Maryland, 1941.

- NORMAN CHARLES DETAR, of Edgewood, Md., B.S. Indiana State College (Pa.), 1960.
- JOHN WILLIAM EDDINGER, of Baltimore, Md., B.A. Villanova University, 1956.
- PARK WILLIAM ESPENSCHADE, of Hyattsville, Md., B.S.E.E. The Drexel Institute, 1927.
- CARL GUSTAV FINSTROM, JR., of Chicago, Ill., B.S. Wheaton College, 1958.
- RISSELLE ROSENTHAL FLEISHER, of Baltimore, Md., B.S. The Johns Hopkins University, 1961.
- PAUL BRUCE FLYNN, of Baltimore, Md., B.S. Loyola College, 1957.
- ANN LANDIS FRANCE, of Baltimore, Md., B.S. in Ed. Towson State College (Md.), 1945.
- MARY BICE FRANTZ, of Baltimore, Md., B.S. Towson State College (Md.), 1963.
- MARGARET CROGHAN FROST, of Baltimore, Md., B.S. Towson State College (Md.), 1963.
- LAWRENCE PAUL FURTAU, JR., of White Marsh, Md., B.S. University of Maryland, 1961.
- ELIZABETH HICKS GARRETT, of Baltimore, Md., B.S. Elem. Ed. Moravian College, 1963.
- JUDITH HARTMAIER GIBBS, of Baltimore, Md., B.A. University of Delaware, 1963.
- KATHERINE MARIE GRIFFIN, of New London, N.C., A.B. Pfeiffer College, 1962.
- PAUL THOMAS HADDOCK, of Reston, Va., B.S.E. (Elec.) The Johns Hopkins University, 1963; B.S.E. (Ind.), 1964.
- CAROLE SUE HAHN, of Washington, D.C., B.S. Wake Forest College, 1966.
- CARL STEIN HARTMAN, of Baltimore, Md., B.A. The Johns Hopkins University, 1936.
- ADELE DILLON HARVEY, of Baltimore, Md., A.B. Trinity College, 1945.
- JOHN COLLINS HARVEY, of Baltimore, Md., B.S. Yale University, 1944; M.D. The Johns Hopkins University, 1947.
- WILLIAM LANGHORNE HASTIE, of Glendora, Calif., A.B. Stanford University, 1947.
- JAMES ROBERT HAWS, of McDonough, Md., A.B. Princeton University, 1964.
- HOWARD ALAN HETTEMAN, of Baltimore, Md., B.A. University of Maryland, 1964.
- CAROLYN GILMER HISLEY, of Baltimore, Md., A.B. Mary Baldwin College, 1960.
- MARY LORD HOFFMAN, of Aberdeen, Md., B.S. The Johns Hopkins University, 1966.
- BETTY CLARISSA HOWARD, of Baltimore, Md., B.A. University of Maryland, 1957.
- MIRIAM MARGOLIS INMAN, of Baltimore, Md., A.B. Hunter College, 1939.
- JULIUS ISAACSON, of Baltimore, Md., LL.B. University of Maryland, 1923.
- JOHN FOUNTAINE JONES, JR., of Baltimore, Md., B.S. in Ed. Millersville State College (Pa.), 1958.
- NANCY LYNN KARWEIT, of Baltimore, Md., B.A. Salem College, 1962.
- GARY LEE KEEDY, of Keyser, W. Va., B.A. Davis and Elkins College, 1964.
- THOMAS ALFRED KING, of Edgewater, Md., B.A. University of Denver, 1960.
- JOY COVERT KYNE, of Baltimore, Md., B.A. University of Maryland, 1955.
- CURTIS EDWARD LANTZ, of Hydes, Md., B.S. The University of Maryland, 1952.
- EDGAR ALPINE LARSH, of Baltimore, Md., B.S. Loyola College, 1960.
- ROBERT ERVIN LEIHY, of Baltimore, Md., B.S. Purdue University, 1958.
- EVELYN LEVY, of Baltimore, Md., A.B. Radcliffe College, 1930.
- BARBARA ZARESWITZ LIPMAN, of Baltimore, Md., B.S. Towson State College (Md.), 1963.
- GERTRUDE ANNE LLEWELLYN, of Timonium, Md., B.A. Hood College, 1962.
- CHARLES ROSS LOCASCIO, of Pasadena, Md., B.A. St. Francis College, 1964.
- ANNE ABLER McCABE, of Kensington, Md., B.S. Marquette University, 1957.
- RUTH ELIZABETH MCCARTY, of Baltimore, Md., B.S. Towson State College (Md.), 1942.
- THOMAS ROBB McDANIEL, of Herndon, Va., B.A. Hampden-Sydney College, 1963; M.A.T. The Johns Hopkins University, 1964.
- MICHAEL ANTHONY McDANIELD, of Bowie, Md., B.S. University of Missouri, 1956.
- IRIS PRECOURT MCGILLIVRAY, of Annapolis, Md., B.S. Wisconsin State University, Stevens Point, 1943; B.L.S. The University of Wisconsin, 1946.
- DONALD JOSEPH MCGRAW, of Baltimore, Md., B.A. University of Maryland, 1966.
- BETTIE HUDGINS MILES, of Baltimore, Md., A.B. Lynchburg College, 1941.
- HERBERT CORWIN MOORE, of Baltimore, Md., B.S. The Johns Hopkins University, 1934; LL.B. The University of Maryland, 1927.
- CAROLE ANN ODIORNE MUNRO, of Lutherville, Md., B.A. Hood College, 1964.

- RALPH GORDON MURDY, of Baltimore, Md., B.S. Fordham University, 1950.
- JOHN FREDERICK NEIDECKER, of Baltimore, Md., B.S. in Ed. The Ohio State University, 1950.
- KATHLEEN CRONIN O'CONNOR, of Havertown, Pa., A.B. Notre Dame College of Staten Island, 1949.
- ANNE KATHRYN SMITH OPPEL, of Baltimore, Md., B.S. The Johns Hopkins University, 1959; M.Ed. Loyola College, 1964.
- JOHN ALBERT O'SHEA, of Baltimore, Md., A.B. Loyola College, 1924; LL.B. University of Maryland, 1927.
- MARGARET ELIZABETH HERBERT PARK, of Catonsville, Md., B.A. Ursinus College, 1943.
- MYRA TURKEL PETERSON, of Baltimore, Md., B.A. Douglass College, 1963.
- DAVID ALLAN PERLMAN, of Woodbridge, Va., B.E.S. The Johns Hopkins University, 1964.
- GEORGE BARKER PRETTYMAN, JR., of Simpsonville, Md., B.A. University of Delaware, 1961.
- BARBARA POLAND RAINE, of Baltimore, Md., B.A. Longwood College, 1964.
- LINDA SHULMAN REDSTONE, of Baltimore, Md., A.B. University of Michigan, 1964.
- RUTH S. RILEY, of Baltimore, Md., A.B. New York University, 1946; A.M. 1950.
- ELLEN O'BRIEN RODRIGUEZ, of Baltimore, Md., B.A. The College of St. Catherine, 1961.
- ELLEN MARIE ROGUS, of Baltimore, Md., B.S. The Johns Hopkins University, 1965.
- STEPHEN PETER ROTHSTEIN, of Pikesville, Md., B.S. Mansfield State College (Pa.), 1964.
- ROBERT JAMES ROTHWELL, of Baltimore, Md., B.S. New York State College of Forestry, 1949.
- KATHERINE PARKER ROUSE, of Baltimore, Md., A.B. Vassar College, 1937.
- WILLIAM CHRISTIAN SCHULTHEIS, of Baltimore, Md., B.A. University of Maryland, 1961.
- CAMILLA McDOWELL STIVERS, of Baltimore, Md., B.A. Wellesley College, 1960.
- JAMES FENN SULLIVAN, of Baltimore, Md., B.A. Gonzaga University, 1948.
- RICHARD DAVISSON TABER, of Baltimore, Md., B.S. The Johns Hopkins University, 1965.
- MARSHA LEIKACH TISHLER, of Baltimore, Md., B.A. University of Maryland, 1963.
- SIDNEY HERBERT TISHLER, of Baltimore, Md., B.S. Towson State College (Md.), 1958.
- MELVIN EDWARD TOUSSAINT, JR., of Bel Air, Md. B.A. The Johns Hopkins University, 1958.
- GERTRUDE PORT VANDERBILT, of Lutherville, Md., B.A. Good Counsel College, 1941.
- JANE KASPER VELDER, of Baltimore, Md., B.S. Towson State College (Md.), 1952.
- NANCY CHILDS WALKER, of Baltimore, Md., B.A. University of South Carolina, 1940; B.A. in L.S. Emory University, 1941.
- CATHERINE CHARLOTTE WILLIAMS, of Dover, Del., B.A. University of Delaware, 1964.
- JESSIE ELIZABETH WILSON, of Washington, D.C., A.B. Virginia Union University, 1948; B.S. in L.S. Atlanta University, 1948.
- ARTHUR CARLETON WINN, of Towson, Md., B.S. (C.E.) Texas A. & M. University, 1958.
- HOWARD JOSEPH WISE, of Baltimore, Md., A.B. The Johns Hopkins University, 1952.
- FRANCES BREWSTER YOUNG, of Baltimore, Md., B.A. The American University, 1940.
- BARBARA HESS ZEIDERS, of Potomac, Md., B.S. Ed. Shippensburg State College (Pa.), 1953.
- MYROSLAW ZOBNIW, of Baltimore, Md., B.S. The Johns Hopkins University, 1960.

(95)

CERTIFICATES OF ADVANCED STUDY IN EDUCATION

- DOROTHY SINGLETON EVANS, of Baltimore, Md., B.S. Hampton Institute, 1951; M.A. New York University, 1961.
- BRENDA MOSS GALINA, of Chamblee, Ga., B.S. in Ed. Northwestern University, 1961; M.A. Columbia University, 1963.
- LILLIAN HOFFMAN GREEN, of Baltimore, Md., B.S. The Johns Hopkins University, 1936; M.Ed. 1960.
- DONALD GORDON HOES, of Baltimore, Md., B.A. Morgan State College, 1955; M.Ed. The Johns Hopkins University, 1965.
- ALICE LINDEMAN KEMPNER, of Baltimore, Md., A.B. Hunter College, 1944; M.Ed. The Johns Hopkins University, 1963.
- HERMAN FREDERICK POLLHEIN, of Baltimore, Md., B.S. Towson State College (Md.), 1954; M.A. Teachers College, Columbia University, 1958.
- PEARL MAE BROCK RISSE, of Baltimore, Md., B.S. Elizabethtown College, 1940; M.Ed. The Johns Hopkins University, 1966.

MIRIAM POLIAKOFF SCHATZMAN, of Baltimore, Md., B.S. Winthrop College, 1927; M.Ed. The Johns Hopkins University, 1965.

CARRIE OWINGS STATEN, of Baltimore, Md., B.S. Coppin State College (Md.), 1943; M.A. New York University, 1950.

STANLEY WENTWORTH STOCKER, of Ellicott City, B.S. Springfield College, 1949; M. Ed., 1956.

RAYMOND EDWARD WANNER, of Bel Air, Md., A.B. St. Mary's Seminary, 1955; S.T.B. University of Angers, 1959; M.Ed. The Johns Hopkins University, 1966.

EDWARD P. WASHINGTON, of Fort George G. Meade, Md., B.S. Youngstown University, 1960; M.A. Western Michigan University, 1962.

CURTIS BRONDELL WOLF, of Lutherville, Md., B.S. Towson State College (Md.), 1954; M. Ed. Loyola College, 1963.

(13)

MASTERS OF SCIENCE

in the School of Hygiene and Public Health

with titles of theses

MAXINE VALERIE ATTEA, of Lakewood, Ohio, B.S. Siena Heights College, 1964. Biochemistry.

Glutamate Transport in *Escherichia coli* B.

CATHERINE PEARL BINGHAM, of Nashville, Tenn., B.S. Middle Tennessee State College, 1959. Chronic Diseases.

The Post-natal Development of the *I* and *i* Antigens.

WILLIAM B. EMISON, of Boise, Idaho, B.S. in Wildlife Tech. Montana State University, 1962. Pathobiology.

Feeding Preferences of the Adelie Penguin, *Pygoscelis adeliae*.

AVIVA RON, of Baltimore, Md. Medical Care and Hospitals.

The Pattern of Care and Demand for Cataract Surgery in the Aged—Observations in The Johns Hopkins Hospital before and after the Introduction of Medicare.

(4)

DOCTORS OF SCIENCE

in the School of Hygiene and Public Health

with titles of theses

CONRADO AGUSTIN Y ESGUERRA, of Malabon, Rizal, Republic of the Philippines, M.D. University of the Philippines, 1956. Biochemistry.

Prematurity in Rats Induced by Amino Acid Imbalance.

ALAN DEXTER ANTOINE, of Baltimore, Md., B.S. The University of Wisconsin, 1962; Sc.M. The Johns Hopkins University, 1964. Pathobiology.

Environmental Control of Storage Materials in Mycobacteria.

EDWARD ULRIC BUDDMEYER, of Baltimore, Md., A.B. Gettysburg College, 1955. Radiological Science.

Factors Affecting Thyroid Iodine Content in the Rat.

R. BRADLEY SACK, of Portland, Oreg., B.S. Lewis and Clark College, 1956; M.S. University of Oregon, 1960; M.D., 1960. Pathobiology.

Experimental *Vibrio cholerae* Infection in Dogs and Germ Free Mice.

SALAH EL-DIN MAHMOUD SOLIMAN, of Cairo, Egypt, United Arab Republic, M.B., B.Ch. Ain Shams University, Egypt, 1959. Environmental Medicine (Audiology and Speech).

A Comparative Study of GSR and AER of Auditory Function and Behavior of Inbred Mice with Different Brain Weights.

JAMES JUAN SPILLETT, of Logan, Utah, B.S. Utah State University of Agriculture and Applied Science; M.S., 1965. Pathobiology.

The Ecology of the Lesser Bandicoot Rat in Calcutta.

STEPHEN RICHARD SYLK, of Philadelphia, Pa., A.B. University of Pennsylvania, 1957. Pathobiology.

Studies on the Growth and Development of Migrating Larvae of *Ascaris lumbricoides* var. *suum*.

TODD W. THORSLUND, of Seattle, Wash., B.S. University of Washington, 1961. Biostatistics.

Computationally Simple and "Efficient" Estimators for a One Parameter Exponential Model.

ESTHER WOLLIN, of Baltimore, Md., A.B. New Jersey College for Women, 1942; M.P.H. University of Michigan, 1951. Mental Hygiene.

A Method of Projecting the Size and Composition of a Mentally Retarded Population Requiring Institutionalization.

(9)

MASTERS OF PUBLIC HEALTH

ANN MERRIOL ALMOND, of Tulsa, Okla., A.B. Radcliffe College, 1959; M.D. The University of Rochester, 1965.

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CARLOS R. BAEZA-MUNIZ, of Hato Rey, Puerto Rico, B.A. and B.S. University of Puerto Rico, 1962; M.D., 1965.

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MILLARD BASS, of Philadelphia, Pa., D.O. Kirksville College of Osteopathy and Surgery, 1957.

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RONALD G. BOUCHER, of Glen Burnie Park, Md., B.S. Georgetown University, 1958; M.S.W. The Catholic University of America, 1961.

WILFRED JOHN BROWNLOW, JR., of Zion, Ill., B.S. The University of Wisconsin, 1952; M.S., 1954; M.D. University of Maryland, 1966.

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CHRISTOPHER M. G. BUTTERY, of Alexandria, Va., M.B., B.S. University of London, 1955.

FRANCIS CLEMENT CADIGAN, JR., of Bethesda, Md., A.B. Boston College, 1951; M.S., 1956; M.D. Tufts University, 1956.

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ROBERT G. CASTADOT, of Baltimore, Md., M.D. University of Liège, Belgium, 1958; Dipl. Med. Colonial Prince Leopold Institute of Tropical Medicine, Belgium, 1958.

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EDWARD S. COLBY, of Baltimore, Md., A.B. University of Illinois, 1961; M.D. The Chicago Medical School, 1966.

HERBERT WILLIAM COONE, of McLean, Va., A.B. Brown University, 1934; M.D. Harvard University, 1938.

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ALBERTO J. DIAZ, of Baltimore, Md., M.D. University of San Domingo, 1957.

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LUIS FERNANDO DUQUE, of Medellin, Colombia, M.D. University of Antioquia, Colombia, 1964; M.P.H., 1966.

MUSALLAM SEIF ELBUALLY, of Edenton, N. C., M.B., B.S. University of Durham, England, 1960; D.T.M. & H. The University of Liverpool, 1963.

HOWARD ALDRICH FABRY, of Canandaigua, N. Y., B.S. in Quant. Biol. Massachusetts Institute of Technology, 1959; M.D. State University of New York Upstate Medical Center, 1963.

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DANIEL HERSCHEL FRAMM, of Silver Spring, Md., B.S. University of Maryland, 1952; M.D., 1954.

SISTER MARY ANN GRAF, R.S.M., of Baltimore, Md., B.S. in Nurs. Saint Louis University, 1965.

CHARLES EDWARD GRAHAM, of Laurel, Md., B.A. Huntingdon College, 1958; M.D. The Johns Hopkins University, 1962.

WALTER MANFRED GREISSINGER, of Tacoma, Wash.

RUTH MURRAY HAGSTROM, of Nashville, Tenn., B.S. Mississippi State College for Women, 1950; M.D. Vanderbilt University, 1956.

RICHARD ALVAH HALL, of Lanham, Md., B.S. University of Southern California, 1951; Pharm.D., 1955.

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JOHN PATTERSON HEILMAN, JR., of Butler, Pa., B.A. Washington and Jefferson College, 1960; M.D. The Jefferson Medical College of Philadelphia, 1964.

OSCAR HENAO-CABAL, of Cali, Colombia, M.D. National University of Colombia, 1951.

- JEAN JAFFREY HEWITT, of Lambertville, N. J., B. S. in Nurs. Western Reserve University, 1960.
- SAMUEL BLOODGOOD HOPKINS, of Lahore, Pakistan, A. B. Harvard University, 1961; LL. B., 1964.
- BETTY CRANSTON JEFFERY, of Alexandria, Va., B. S. N. The Catholic University of America, 1961.
- STEPHEN CARL JOSEPH, of Baltimore, Md., A. B. Harvard University, 1959; M. D. Yale University, 1963.
- PUSHPA KAPOOR, of Lucknow, Uttar Pradesh, India, M. B., B. S. University of Lucknow, 1961.
- JAMES BURNETT KEGLEY, JR., of Wytheville, Va., B. S. Roanoke College, 1948; M. D. Medical College of Virginia, 1952.
- TALAT KHAN, of Karachi, Pakistan, M. B. B. S. University of Karachi, 1956.
- OSCAR HENRY KILLEN, of Londonderry, Northern Ireland, U. K., M. B., B. Ch., B. A. O. University of Dublin, 1949; M. D., 1954; D. P. H. University College, Dublin, 1958.
- IL-SOON KIM, of Baltimore, Md., M. D. Yonsei University, Korea, 1961.
- MO-IM KIM, of Seoul, Korea, B. S. N. Yonsei University, Korea, 1959; M. S. (P. Hlth.) University of Hawaii, 1967.
- ALFRED E. KRAKE, of Baltimore, Md., B. S. Louisiana State University, 1962; M. D., 1964.
- SIDNEY DEAN KREIDER, of Baltimore, Md., M. D. Bowman Gray School of Medicine, 1965.
- WILLIAM FREDERICK LANG, of Salisbury, Md., B. S. University of Maryland, 1958.
- KURT LEKISCH, of Midland, Texas, M. D. University of Berne, Switzerland, 1937.
- MADELEINE LENOIR, of Brussels, Belgium, Grad. in Nurs. Free University of Brussels, 1955.
- CAROL A. LEWIS, of Lafayette, Ind., B. S. in Medical Record Librarianship Indiana University, 1953.
- JOSEPHINE SPANN MAGNESS, of Bel Air, Md., B. S. in Nurs. Mount Saint Agnes College, 1955.
- RAYMOND NEIL MCCANDLESS, of Towson, Md., B. S. The Johns Hopkins University, 1964.
- CLAUDE LEE MCFARLANE, of Tacoma, Wash., B. S. College of Puget Sound, 1959; M. D. University of Washington, 1963.
- RODOLFO C. MERCADO, of Binan, Laguna, Republic of the Philippines, M. D. University of Santo Tomas, 1961.
- HAJIME MIURA, of Nagasaki, Japan, M. D. Kyoto University, 1953.
- THADDEUS JOSEPH MURAWSKI, of Schenectady, N. Y., B. S. The Creighton University, 1949; M. D., 1953.
- HATCHA NA BANGXANG, of Baltimore, Md., M. D. University of Medical Sciences, Thailand, 1954; M. P. H., 1957.
- BJORN W. NILSON, of Baltimore, Md., B. A. The Ohio State University, 1964; M. D., 1964.
- DAVID MICHAEL O'BYRNE, of Kansas City, Mo., A. B. Baker University, 1958; M. D. University of Kansas, 1966.
- D. M. OZONOFF, of Milwaukee, Wis., B. S. The University of Wisconsin, 1962; M. D. Cornell University, 1967.
- ASTRID SCHILBRED RICKER, of Philadelphia, Pa., B. S. in Nurs. The Ohio State University, 1965.
- ROGER BRIAN RODRIGUE, of Saint Kilda, Victoria, Australia, M. B. B. S. University of Melbourne, 1956; D. T. M. & H. The University of Sydney, 1960; D. P. H., 1966.
- DAVID LEWIS ROGERS, of Crofton, Md., B. A. Amherst College, 1950; M. D. The University of Rochester, 1955.
- DONALD M. ROSENBERG, of Brooklyn, N. Y., B. S. Columbia University, 1957; M. D. University of Lausanne, Switzerland, 1965.
- RONALD EUGENE RUDD, of Shelby, Ohio, B. A. Ohio Wesleyan University, 1958; M. D. University of Cincinnati, 1962.
- JOAN MARGARET SHEA, of Elmhurst, N. Y., B. S. in Nurs. Cornell University, 1962.
- ANANT SRIVANICK, of Bangkok, Thailand, M. D. University of Medical Sciences, Thailand, 1961.
- PAUL DAVID STOLLEY, of Baltimore, Md., A. B. Lafayette College, 1957; M. D. Cornell University, 1962.
- ANDREW SUAN ON SUN, of San Francisco, Calif., B. S. University of California, Berkeley, 1961; M. D. Harvard University, 1966.
- NORMAN TARR, of Baltimore, Md., M. D. University of Maryland, 1948.
- DAVID RODERICK TEN EYCK, of Burbank, Calif., A. B. Occidental College, 1951; M. D. University of Southern California, 1955.
- CLAUDE HECTOR THILLY, of Brussels, Belgium, M. D. Free University of Brussels, 1963; D. T. M. Prince Leopold Institute of Tropical Medicine, Belgium, 1965.
- MELVYN CHARLES THORNE, of Wyomissing, Pa., A. B. University of California, Berkeley, 1956; M. D. Harvard University, 1960.
- LILY MARY TURNBULL, of Saskatoon, Sask., Canada, B. N. McGill University, 1947.
- MILDRED ELLA WARD, of San Antonio, Texas, M. D. Louisiana State University, 1940.
- MARIAN LESLIE WEBB, of Towson, Md., M. D. University of Alberta, Canada, 1958.
- NORMAN MILTON WEBER, of Baltimore, Md., M. D. University of Missouri, 1963.
- HARRY WILLIAM WELLER, of Muncy, Pa., B. S. The Pennsylvania State College, 1950; M. D. Jefferson Medical College of Philadelphia, 1954.
- JERRY ALLEN WHITE, of United States Air Force, M. D. The University of Texas, 1959.

HARRY S. WISE, of Silver Spring, Md., A. B. Louisiana State University, 1935; A. M., 1937; M. D., 1948.

FREDERICK KWADZO WURAPA, of Baltimore, Md., B. S. Syracuse University, 1959; M. D. The University of Buffalo, 1964.

JAMES GREGORY ZIMMERLY, of Ellicott City, Md., B. A. Gannon College, 1962; M. D. University of Maryland, 1966.

(84)

DOCTORS OF PUBLIC HEALTH

with titles of theses

BEVERLY HENRY BOWNS, of Bowie, Md., B. S. Columbia University, 1959; M. P. H. University of Minnesota, 1960. Mental Hygiene.

Early Adolescent Pregnancy in Relation to Girls' Reports of Their Mothers' Behavior.

JAMES EDWARD CASSIDY, of Lanham, Md., D. M. D. Tufts University, 1948; B. A. Incarnate Word College, 1960; M. P. H. The Johns Hopkins University, 1967. Public Health Administration.

Maryland Dental Manpower Projection—1980.

JOHN J. DEMPSEY, of Reisterstown, Md., B. A. The Catholic University of America, 1957; M. S. W., 1961; M. P. H. The Johns Hopkins University, 1964. Population and Family Health (Maternal and Child Health).

Association between Parity Status and Fertility among Fifteen Year Old Adolescents, Baltimore City, 1959-1961.

JANICE EDDY MICKEY, of Pittsburgh, Pa., B. Sc. in Ed. The University of Nebraska, 1931; M. S. University of Minnesota, 1943. Public Health Administration.

A Methodological Study of Extra-hospital Nursing Needs.

JOHN WILLIE KWAMINA DUNCAN, of Lagos, Nigeria, B. Sc. Eng. University of London, 1959; M. Eng. McGill University, 1964; M. P. H. The Johns Hopkins University, 1966. Environmental Health.

The Investigation on the Conditioning and Hydraulics of Sewage Sludge prior to Barging to Sea.

LEON GORDIS, of Baltimore, Md., A. B. Columbia University, 1954; M. D. State University of New York Downstate Medical Center, 1958; M. P. H. The Johns Hopkins University, 1966. Chronic Diseases.

Studies in Prevention of Rheumatic Fever: Problems and Potentials.

AMELIA MANGAY-MAGLACAS, of Quezon City, Republic of the Philippines, B. S. in Nurs. Vanderbilt University, 1953; M. P. H. University of Minnesota, 1959. Public Health Administration.

Study of the Utilization of a Rural Health Unit in a Municipality in the Philippines.

(7)

DOCTORS OF PHILOSOPHY

in The School of Hygiene and Public Health

with titles of dissertations

JOHN WILLIAM BENDLER, III, of Philadelphia, Pa., B. S. Yale University, 1959. Biochemistry.

Size of Prophage HPI-cl and Amount of DNA between Genetic Markers in *Hemophilus influenzae*.

JOHN CHUKWUNYERE NNADI, of Awaka, Owerri, Biafra, B. S. (Chemistry) Howard University, 1962; M. S. (Chemistry), 1965. Biochemistry.

Studies on the Mechanisms of Photohydration and Photodecarboxylation of Pyrimidines.

CATHERINE A. REZNIKOFF, of Boston, Mass., A. B. Trinity College, District of Columbia, 1964. Pathobiology.

Transformation Studies on Rat Fibroblasts.

BUCK AUSTIN RHODES, of Baltimore, Md., B. S. in Agr. New Mexico State University, 1958. Radiological Science.

Isotopic Equilibrium Studies of Iodine Metabolism with Emphasis on the Circulating Iodotyrosines.

FRANK DAVID ROLLO, of Binghamton, N. Y., B. A. Harpur College, 1959; M. S. University of Miami, 1965. Radiological Science.

A Quantitative Evaluation of Pulse Height Selection in Rectilinear Scanning Systems.

MARTIN PAUL SCHWEIZER, of Depew, N.Y., A.B. University of California, Riverside, 1960; M.A., 1963. Radiological Science.

Investigations on Structure and Interactions of Nucleic Acids and Their Components by Proton Magnetic Resonance.

WILLIAM L. STEINHART, of Baltimore, Md., A.B. University of Pennsylvania, 1964. Biochemistry.

Selected Aspects of the Stages of DNA Uptake and Integration in *Hemophilus influenzae* Transformation.

(7)

MASTERS OF ARTS

in The School of Advanced International Studies

DENNIS JOHN AMATO, of Manhasset, N.Y., B.A. Boston College, 1966.

FREDERICK BRENNEN BACHMAN, of Minneapolis, Minn., B.A. St. Olaf College, 1964.

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- JAY LEONARD KAPLAN, of Newark, N. J., B. A. Rutgers University, 1966.
- RAYMOND WILLIAM KONAN, of Calumet Park, Ill., B. A. University of California, Berkeley, 1965.
- IRIS MABEL LAREDO, of Rosario, Argentina, Dr. in Diplomacy, Litoral University, 1955.
- SHMUEL LIMONE, of Ramat-Gan, Israel, B. A. University of California, Berkeley, 1966.
- RONALD L. LETTENY, of Honolulu, Hawaii, B. S. Worcester Polytechnic Institute, 1966.
- RONALD P. LOFTUS, of Bethesda, Md., B. A. The George Washington University, 1966.
- THOMAS MELVIN MAGSTADT, of Sioux Falls, N. D., B. A. Augustana College, 1966.
- MIDDLETON ANSLEY MARTIN, of Glen Head, N. Y., B. A. Princeton University, 1966.
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- GERHARD PFANZELTER, of Innsbruck, Austria, Dr. jur. University of Innsbruck, 1966.
- PAMELA STAGG POTTER, of Webster Groves, Mo., B. A. Smith College, 1966.
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- WILLIAM STACY RHODES, of Tucson, Ariz., B. A. Occidental College, 1966.
- GORDON LOUIS ROCCA, of Falls Church, Va., B. A. University of Virginia, 1965.
- EUGENE SARVER, of Mount Vernon, N. Y., B. A. Haverford College, 1965.
- FRANK SAVAGE, of New York, N. Y., B. A. Howard University, 1962.
- TODD WINFIELD SEABOLD, of Glyndon, Md., B. A. University of Virginia, 1966.
- SALLY ANGELA SHELTON, of Monett, Mo., B. A. University of Missouri, 1966.
- MICHAEL L. SHEPHERD, of Bainbridge, Ga., B. A. University of Georgia, 1966.
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- MERRILL THOMAS SPALDING, of Palo Alto, Calif., B. A. San Jose State College, 1966.
- RICHARD HYNSON STOLLENWERCK, of Greenwich, Conn., B. A. Princeton University, 1965.
- BRANDON WELLER SWEITZER, of Madison, Conn., B. A. Harvard College, 1964.
- HARRIET ELLEN SWERN, of Philadelphia, Pa., B. A. Bryn Mawr College, 1965.
- TAIN PENDLETON TOMPKINS, of Hillsborough, Calif., B. A. Washington and Lee University, 1964.
- ANN LOUISE TONJES, of Fond du Lac, Wis., B. A. University of Wisconsin, 1965.
- ROBERTO TOSCANO, of Parma, Italy, Laurea in Law University of Parma, 1966.
- MICHAEL HILLEGAS VAN DUSEN, of Bala-Cynwyd, Pa., B. A. Princeton University, 1966.
- LESLIE D. WATSON, of Long Beach, Calif., B. A. University of Oregon, 1965.
- MENDL M. WHITEHEAD, of Shawmut, Ala., B. A. Mississippi State College for Women, 1966.
- SHELTON LEE WILLIAMS, of Austin, Texas, B. A. University of Texas, 1966.
- EDWARD THOMAS WILSON, of Washington, D. C., B. A. Princeton University, 1963; B. Litt. St. Antony's College Oxford, 1966.
- STEPHEN BRIM WOOLFERT, of Washington, D. C., B. A. Grinnell College, 1965.
- GERALD WÜRCKER, of Frankfurt, Germany, Referendar University of Freiburg, 1966.
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DOCTORS OF PHILOSOPHY

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ROBERT BRENTON BETTS, of Monrovia, Calif., B. A. College of William and Mary, 1962; M. A. School of Advanced International Studies, The Johns Hopkins University, 1964.

The Indigenous Arabic-Speaking Christian Communities of Greater Syria and Mesopotamia.

J. ALEXANDER KIM, of Geneva, N. Y., B. S. Columbia University, 1962; M. A. School of Advanced International Studies, The Johns Hopkins University, 1965.

A Comparative Study of the Role of a Leader in Political Development: Syngman Rhee in South Korea and Kim Il-Sŏng in North Korea.

HANS SCHOENBERG, of Munich, Germany, B. A. Wittenberg College, 1953; M. A. School of Advanced International Studies, The Johns Hopkins University, 1956.

Germans from the East: A Study of their Migration, Resettlement, and Subsequent Group History, 1945-1961.

ROBERT K. WOLTHUIS, of Arlington, Va., B. A. University of Utah, 1960; M. S. 1963.
United States Foreign Policy towards the Netherlands Indies: 1937-1945.

ROBERT RICHARD SULLIVAN, of Chicopee Falls, Mass., B. S. Boston College, 1959; M. A. School of Advanced International Studies, The Johns Hopkins University, 1964.

The Politics of Altruism: A Study of the Partnership between the United States Government and American Voluntary Relief Agencies for the Donation Abroad of Surplus Agricultural Commodities, 1949-1967.

VICTOR REUBEN SWENSON, of Whiting, Ind., B. A. Oberlin College, 1958; M. A. The George Washington University, 1960.

The Young Turk Revolution: A Study of the First Phase of the Second Turkish Constitutional Regime from June 1908 to May 1909.

DONALD E. WEATHERBEE, of South Portland, Maine, B. A. Bates College, 1954; M. A. School of Advanced International Studies, The Johns Hopkins University, 1956.
Aspects of Ancient Japanese Politics.

(7)

DOCTORS OF MEDICINE

LARRY EDWARD ALESSI, of Baltimore, Md., B. A. The Johns Hopkins University, 1964.

RALPH CHARLES AUCHENBACH, of Myerstown, Pa., A. B. Franklin and Marshall College, 1964.

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BRIAN BLOCK, of Buffalo, N. Y., A. B. Harvard College, 1964.

EDWARD ROY BLOCK, of Baltimore, Md., B. A. The Johns Hopkins University, 1965.

SHELBY RICHARD BRAMMER, of Chattanooga, Tenn., B. A. Vanderbilt University, 1964.

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JOHN F. BRENSIKE, of Madison, Wis., B. S. University of Wisconsin, 1964.

MARK JEFFREY BRODKEY, of Omaha, Nebr., A. B. Dartmouth College, 1965.

ROBERT HENRY BROOK, of Tucson, Ariz., B. S. University of Arizona, 1964.

SCOTT CASPER BRUNS, of Boulder, Colo., B. A. University of Colorado, 1964.

ROBERT WESTBROOK BUTNER, of San Angelo, Texas, B. A. Rice University, 1964.

JAMES E. CONANT, of Menominee, Mich., B. S. Michigan State University, 1964.

MARTIN WILLIAM DENKER, of Hollywood, Fla., B. A. The Johns Hopkins University, 1965.

MARK DONOWITZ, of Freehold, N. J., B. A. Brandeis University, 1964.

CAROLE ANN DORSCH, of Baltimore, Md., A. B. Goucher College, 1964.

DAVID LEE EPSTEIN, of Chicago, Ill., B. A. The Johns Hopkins University, 1965.

LYNN MARSHA CHAIKIN EPSTEIN, of Great Neck, N. Y., B. A. The Johns Hopkins University, 1965.

- DOUGLAS THOMAS FEARON, of Brooklyn, N. Y., B. A. Williams College, 1964.
- PERRIN LINDOL FRENCH, of San Francisco, Calif., A. B. Harvard College, 1964.
- CLAUDE TEDDY HUGO FRIEDMANN, of Detroit, Mich., B. A. The Johns Hopkins University, 1965.
- DANIEL ERIC FURST, of Mamaroneck, N. Y., B. A. The Johns Hopkins University, 1964.
- CLARENCE WINFRED GEHRIS, JR., of Spencerport, N. Y., A. B. Princeton University, 1964.
- CHARLES BRUCE GIBBS, of Oxford, Pa., A. B. Harvard College, 1964.
- JEFFREY ROGER GRANETT, of Mamaroneck, N. Y., B. A. The Johns Hopkins University, 1964.
- DAN M. GRANOFF, of Great Neck, N. Y., B. A. The Johns Hopkins University, 1965.
- FREDERICK TERRY HAMBRECHT, of Galesburg, Ill., B. S. Purdue University, 1961; M. S. Massachusetts Institute of Technology, 1963.
- GARY STEPHENS HILL, of Shamrock, Texas, B. A. Rice Institute, 1960.
- DAVID LAWRENCE JACKSON, of Baltimore, Md., B. A., The Johns Hopkins University, 1961; Ph. D. The Johns Hopkins University, 1967.
- THOMAS PRICE JACOBS, JR., of Larchmont, N. Y., A. B. Amherst College, 1964.
- ALLAN DAVID JENSEN, of Antioch, Ill., B. A., The Johns Hopkins University, 1965.
- ROBERT MAYNARD JOHNSTON, of Darien, Conn., B. S. Massachusetts Institute of Technology, 1964.
- LOWELL HART KALLEN, of Newark, N. J., B. A. The Johns Hopkins University, 1963.
- RICHARD GUTMAN KATZ, of Baltimore, Md., B. A. The Johns Hopkins University, 1964.
- PATRICK COLIN KELLY, of Sarasota, Fla., B. A. Emory University, 1964.
- ELMER E. KENNEL, of Lancaster, Pa., B. A. Eastern Mennonite College, 1964.
- SEYMOUR LEVINE, of Newark, N. J., B. A. Rutgers University, 1964.
- JOHN NELSON LEWIS, of Baltimore, Md., B. A. Princeton University, 1964.
- RICHARD WAYNE LIGHT, of Steamboat Springs, Colo., B. S. University of Colorado, 1964.
- SAMUEL JOSEPH LLOYD, JR., of Trenton, N. J., A. B. Princeton University, 1964.
- JACK CALHOUN SCOTT LONG, of Paducah, Texas, B. A. University of Texas, 1964.
- GENEVIEVE A. MACDONALD, of Lexington, Mass., B. A. The Johns Hopkins University, 1964.
- JOHN HENDRIX MACHLEDT, JR., of Greenwood, Ind., A. B. Princeton University, 1964.
- ROY M. MALETZ, of Lynn, Mass., A. B. Brown University, 1964.
- DAVID LAWRENCE MALTZ, of West Newton, Mass., B. A. The Johns Hopkins University, 1964.
- STEPHEN JOHN MARX, of Lawrence, N. Y., B. A. Yale University, 1964.
- STEPHEN HAMES MAYHEW, of Los Angeles, Calif., A. B. University of California, Los Angeles, 1964.
- WALTER JOHN MEYER, III, of Greta, La., B. A. Rice University, 1964.
- JUDITH KAUFMAN MILLIKEN, of Rockville Centre, N. Y., B. A. The Johns Hopkins University, 1965.
- SANFORD DAVIS MINKIN, of Baltimore, Md., B. A. The Johns Hopkins University, 1964.
- JEFFREY DAVID NEILL, of Orange, Conn., B. A. Colgate University, 1964.
- ROBERT ANTHONY NORUM, of Fargo, N. Dak., B. A. North Dakota State University, 1964.
- J. PATRICK O'BRIEN, of Washington, D. C., B. A. Yale University, 1963.
- MARY I. OLSON, of Yakima, Wash., B. S. Washington State University, 1964.
- MATTHEW POLLACK, of Baltimore, Md., A. B. Princeton University, 1964.
- PAUL MITCHELL REDSTONE, of Detroit, Mich., B. S. University of Michigan, 1964.
- LESTER ABBOTT REID, of Plainfield, N. J., A. B. Dartmouth College, 1956; M. S., 1957.
- LAMAR WILLIAMSON RIGGS, of Little Rock, Ark., B. A. Davidson College, 1960.
- ROBERT ALAN ROSENBAUM, of Portland, Oreg., B. A. The Johns Hopkins University, 1965.
- JEROME LEE RUBIN, of Brooklyn, N. Y., A. B. Cornell University, 1964.
- ROBERT BRUCE RUSKIN, of Kensington, Md., B. A. Harvard College, 1964.
- GEORGE HENRY SACK, JR., of Baltimore, Md., B. A. The Johns Hopkins University, 1965.
- STEPHEN A. SCHLESINGER, of Seattle, Wash., B. A. Harvard College, 1964.
- LUCY M. SCHMIDT, of San Mateo, Calif., B. A. The Johns Hopkins University, 1965.
- EDWARDS PARK SCHWENTKER, of Baltimore, Md., B. S. Haverford College, 1963.
- JAMES HAROLD SIGHTLER, of Greenville, S. C., B. S. Furman University, 1959.
- JERRY DALE SMILACK, of Winter Haven, Fla., B. A. The Johns Hopkins University, 1965.

- BRUCE DONALD SNYDER, of Miami, Fla., B. S. University of Miami, 1964.
- JOHN ROBERT SOBOTKA, of Decatur, Ala., B. A. Vanderbilt University, 1962; B. A. Worcester College Oxford, 1965.
- LO SOOVERE, of Cincinnati, Ohio, B. A. The Johns Hopkins University, 1965.
- MIRIAM RACHEL WINTER SPINNER, of Merrick, N. Y., B. A. The Johns Hopkins University, 1965.
- PAUL LEO TECKLENBERG, of Baltimore, Md., B. A. Gettysburg College, 1964.
- JESSE GILBERT THOENE, of Bakersfield, Calif., B. S. Stanford University, 1964.
- VERNON THORPE TOLO, of Rake, Iowa, B. A. Concordia College, 1964.
- JAMES MANSEL TUBB, of Alexandria, Va., B. A. The Johns Hopkins University, 1965.
- DENIS HOWARD TYRAS, of Massapequa, N. Y., B. A. The Johns Hopkins University, 1965.
- DAVID ALLAN WALLER, of Louisville, Ky., B. A. Harvard College, 1964.
- BARBARA PEARSON WASSERMAN, of Beacon, N. Y., A. B. Barnard College, 1964.
- MARTIN PAUL WASSERMAN, of West Hartford, Conn., B. A. Williams College, 1964.
- GERALD W. WILKINS, of Alliance, Nebr., B. A. University of Nebraska, 1964.
- DWIGHT MORGAN WILLIAMS, of Scarsdale, N. Y., B. A. Harvard College, 1964.
- DAVID STEPHEN ZAMIEROWSKI, of Grand Rapids, Mich., A. B. College of the Holy Cross, 1964.
- CHRISTOPHER KRISTAPS ZARINS, of Brooklyn, N. Y., B. A. Lehigh University, 1964.
- WILLIAM DONELAN ZIEVERINK, of Cincinnati, Ohio, B. A. The Johns Hopkins University, 1965.

(88)

MASTERS OF ARTS

in The School of Medicine

with titles of essays

- HARRIET ROSENBERG GREENFIELD, of Baltimore, Md., A. B. Goucher College, 1966. Art as Applied to Medicine.
An Atlas of Stages in the Morphogenesis of the Mesoderm during Early Heart Formation in the Chick Embryo.
- LYNN BAYNON McDOWELL, of Sarasota, Fla., B. F. A. Newcomb College, 1966. Art as Applied to Medicine.
The Eccrine Gland of the Cat's Foot Pad.

(2)

DOCTORS OF PHILOSOPHY

in The School of Medicine

with titles of dissertations

- GERT HENRY BRIEGER, of Berkeley, Calif., B. A. University of California, Berkeley, 1953; M. D. University of California, Los Angeles, 1957; M. P. H. Harvard University, 1962. History of Medicine.
Stephen Smith: Surgeon and Reformer.
- TIN-LOK CHAN, of Hongkong, British Crown Colony, B. S. Sun Yat-Sen University, 1956; B. S. in Chem. University of Hongkong, 1961; M. S., 1963. Physiological Chemistry.
I. The Incorporation of 74 As-Labeled Arsenate into Mitochondrial Component. II. Studies of the Possible Role of Tryptophan in L-Malate Dehydrogenase.
- CARTER LEE DIGGS, of Deltaville, Va., B. S. Randolph-Macon College, 1956; M. D. Medical College of Virginia, 1960. Microbiology.
Studies on the Humoral Immunity in Rodent Malaria.
- ROGER PURTEE DONAHUE, of Baltimore, Md., B. A. University of New Hampshire, 1957. Human Genetics.
Maturation of the Mouse Egg *in vitro*.
- KATHLEEN LOIS EGGEN, of Appleton, Wis., B. S. Valparaiso University, 1963. Microbiology.
Coat Protein of Coliphage MS2 as a Repressor of Phage Protein Synthesis *in vitro*.
- WILLIAM HARVEY FUCHSMAN, of New York, N. Y., A. B. Harvard College, 1963. Physiological Chemistry.
Studies on Oxygen-Related Reactions of Iron Porphyrins.
- CLAUDE MARIE JOSEPH LABERGE, of Quebec, Que., Canada, B. A. University of Laval, 1957; M. D., 1962. Human Genetics.
Genetic Studies in French Canadians.

SANDY COLE MARKS, JR., of Chapel Hill, N.C., B.S. Washington and Lee University, 1960; D.D.S. University of North Carolina, 1964. Anatomy.

The Role of the Thyroid Parafollicular Cell in the Pathogenesis of Osteopetrosis in Mice.

MICHAEL MATTHIAS MERZENICH, of Baltimore, Md., B.S. University of Portland, 1964. Physiology.

Some Observations on the Encoding of Somesthetic Stimuli by Receptor Populations in the Hairy Skin of Primates.

ROBERT PETER SCOBEEY, of Baltimore, Md., B.S. Worcester Polytechnic Institute, 1960; M.A. Clark University, 1962. Physiology.

Postexcitatory Depression as a Factor Influencing the Precortical Neural Responses to Moving Visual Images.

REUBEN PAUL SIRAGANIAN, of Hackensack, N.J., B.S. American University of Beirut, 1959; M.D. State University of New York, 1962. Microbiology.

The Allergic Response of Rabbit Platelets.

(11)

MASTERS OF SCIENCE IN ENGINEERING

with titles of essays

JEROME BARCLAY ALFORD, of Little Rock, Ark., B.S.C.E. University of Arkansas, 1966. Environmental Engineering Science.

Multi-Media Filtration for Achieving High Efficiency BOD and Suspended Solids Removal Following Biological Treatment of Paper Mill Effluents.

ARTHUR BERESFORD ARCHER, of Barbados, West Indies, National Diploma and Certificate in Construction Technology and Public Health Engineering, Brixton School of Building, London, 1963. Environmental Engineering Science.

Comparison of Bactericidal Efficiency of Single and Serial Dosing of Sewage Effluent with Chlorine.

JOSÉ MANUEL BARBERÁN FALCÓN, of Mexico City, Mexico. Mechanics.

On the Kinetic Theory of Mixtures of Gases.

ALLEN BERKOWITZ, of Brooklyn, N.Y., B.S. Brooklyn College, 1966. Operations Research and Industrial Engineering.

GEORGE LEE CHRISTENSEN, of Bethesda, Md., B.C.E. Villanova University, 1960. Environmental Engineering Science.

Bacterial Quality of Effluents from Bacteriostatically Treated Activated Carbon Filters.

JONATHAN BENNING CROOKS, of Reisterstown, Md., B.E.S. The Johns Hopkins University, 1962. Chemical Engineering.

Investigation of a Simple Theory of Flammability Limits as Applied to the ABC Flame.

DAVID DAYAN, of Matawan, N.J., B.S. The Cooper Union, 1966. Operations Research and Industrial Engineering.

MICHAEL GAUVIN, of Quebec, Que., Canada, B.S. University of Laval, 1965. Environmental Engineering Science.

Stabilization Ponds in Cold Climates.

WILLIAM JOSEPH GILLESPIE, of Baltimore, Md., B.S. in C.E. Drexel Institute of Technology, 1966. Environmental Engineering Science.

An Evaluation of the Practicality of an Optimization Approach to the Allocation of Stream Dissolved Oxygen Resources.

CHARLES GOLDSTEIN, of Bronx, N.Y., B.E. The City College of New York, 1966. Chemical Engineering.

Stability of Plane Couette Flow with Viscous Heating.

HORACIO TOMAS GONZALEZ-MARVAL, of Caracas, Venezuela, Civil Engineer Central University of Venezuela, 1962. Environmental Engineering Science.

A Study of Domestic Waste Treatment by Raw Sewage Stabilization Lagoons.

JACK HENRY GROSSMAN, of Brooklyn, N.Y., B.S. Polytechnic Institute of Brooklyn, 1966. Environmental Engineering Science.

A Flow Study of Papermill Sludges.

WILLIAM WALTER HELLIER, JR., of Baltimore, Md., B.E.S. The Johns Hopkins University, 1966. Chemical Engineering.

A Device for Studying the Vaporization Rates of Liquid Droplets at Elevated Temperatures.

SHIN-CHANG HUANG, of Taiwan, Republic of China, B.E.S. Taiwan Cheng Kung University, 1966. Environmental Engineering Science.

An Investigation of Paper Mill In-Plant Fecal Coliforms Sources and Organism Survival in Receiving Water Environment.

MICHAEL JOHN KARWEIT, of La Canada, Calif., B.A. University of California, Santa Barbara, 1962; M.A. The Johns Hopkins University, 1964. Mechanics.

Using Hydrogen Bubbles as Flow Markers to Study Grid-generated Turbulence.

ALAIN LE CORVEC, of La Rochelle, France, Engineer Diploma Central School of Arts and Manufactures, Paris, 1966. Operations Research and Industrial Engineering.

ROBERT LAP-SUN LEE, of Oakland, Calif., B.S. University of Illinois, 1965. Mechanics.

Three-dimensional Disturbances in the Problem of Temporal and Spatial Helmholtz Instability.

PRABHAT KUMAR SAHA, of Asanol, India, B. of Technology, Indian Institute of Technology, Kharagpur, India, 1958. Environmental Engineering Science.

The Crisis of Watersupply and Sewerage in Urban West Bengal.

CRAIG COLIN SINGER, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1965. Operations Research and Industrial Engineering.

HARCHARAN SINGH, of Calcutta, India, B. Sc. Rangoon Institute of Technology, 1964. Environmental Engineering Science.

A Study of Water Rates with Special Reference to Calcutta Corporation.

HARRY FERNANDO DELARA SMITH, JR., of Oceanside, N. Y., B. C. E. University of Florida, 1962. Environmental Engineering Science.

Public Water Supply Development in Developing Countries.

ROBERT TIMOTHY STONE, of Washington, D. C., B. S. Boston College, 1966. Operations Research and Industrial Engineering.

RAFAEL SUAREZ-MORALES, of Caracas, Venezuela, Civil Engineer Andres Bello Catholic University, 1964. Environmental Engineering Science.

Algae in Water Supplies.

NARINDA KAUR SAHOTA THIND, of Baltimore, Md., B. S. E. Panjab University, 1964; M. Sc., 1966. Electrical Engineering.

GANAPATHY VASUDEVAN, of Madras, India, B. S. in Technology, University of Madras, 1965. Chemical Engineering.

Performance of a Polymerization Reactor in Periodic Operation.

ELBERT EARL WHITLACH, JR., of Wampum, Pa., B. S. Geneva College, 1965; B. S. in C. E. Carnegie Institute of Technology, 1965. Environmental Engineering Science.

Nitrogen and Phosphorus Removal from Domestic Sewage.

(27)

DOCTOR OF ENGINEERING

with title of dissertation

VICTOR EVERETT SCOTTRON, of Storrs, Conn., B. S. Webb Institute of Naval Architecture, 1936; M. S. M. E. Columbia University, 1946. Environmental Engineering Science.

Turbulent Boundary Layer Characteristics over a Rough Surface in an Adverse Pressure Gradient.

(1)

MASTERS OF ARTS IN TEACHING

LANI LEE ALLEMAN, of Santa Ana, Calif., A. B. Stanford University, 1967.

PETER SHAW ASHLEY, of Arlington, Va., A. B. Yale University, 1967.

PETER LEE ATHERTON, of Louisville, Ky., A. B. Georgetown University, 1966.

KATHARINE CAPERTON BARNHARDT, of Virginia Beach, Va., A. B. Sweet Briar College, 1967.

SHARON LEILIA BEDFORD, of Detroit, Mich., A. B. The University of Michigan, 1966.

CHERYL DARIA BELSKY, of Fresh Meadows, N. Y., A. B. Barnard College, 1967.

GEORGE EDWARD BERGEY, of Columbia, Pa., B. S. Pennsylvania State University, 1961.

LAURENCE ERWIN BLOCK, of Annapolis, Md., A. B. Princeton University, 1965.

BARBARA MARIE BOURGEOIS, of Baltimore, Md., B. A. University of Maryland, 1967.

SUSAN BREWSTER COCKER, of Clifton, N. J., A. B. Wilson College, 1967.

MARION VIRGINIA CRIST, of Troy, Ohio, B. S. Wittenberg University, 1967.

JEANETTE SMITH CURETON, of Bordentown, N. J., B. A. Bates College, 1967.

TODD MAURICE DALEY, of Staten Island, N. Y., B. S. The City College of New York, 1966.

SUSAN HUNTINGTON WALLER DALSEMER, of Baltimore, Md., A. B. Mount Holyoke College, 1966.

ELIZABETH GRAY DAVIES, of Alma, Mich., A. B. The University of Michigan, 1967.

SUSAN ELAINE DERR, of Cedar Rapids, Iowa, B. A. Cornell College, Iowa, 1966.

PAULA KAREN FINE, of Montreal, Que., Canada, B. A. McGill University, 1966.

KENNETH LEE GREIF, of Baltimore, Md., B. A. Brown University, 1957; LL. B. University of Virginia, 1961.

- JOSEPH JEFFREY GRIFFITH, of Baltimore, Md., B. A. The Johns Hopkins University, 1966.
- BONITA MARIE HANES, of Olney, Md., B. A. Bryn Mawr Mawt College, 1966.
- PATRICIA LOUISE HARTMAN, of Old Tappan, N. J., B. A. Abilene Christian College, 1966.
- CHARLES WINTHROP HATCH, of Columbia, S. C., B. A. University of South Carolina, 1966.
- HELEN LEWIS GORDON HAYWARD, of Hanover, Va., A. B. Middlebury College, 1964.
- MICHAEL POWER HEALY, of Houghton, Mich., B. A. Marquette University, 1964.
- HELEN AMALIE HEISSLER, of Union, N. J., A. B. Wilson College, 1966.
- MARY CAROL HINTGEN, of Fergus Falls, Minn., B. A. The College of St. Catherine, 1966.
- NANCY JANE DRIVER HOLBROOK, of Marcellus, N. Y., A. B. Oberlin College, 1966.
- NANCY LEE JOHNSON, of Augusta, Maine, A. B. Colby College, 1966.
- MARY ELLEN HOY JONES, of Riverdale, Md., A. B. Stanford University, 1966.
- SUSAN MAXINE KAHAN, of Milford, Conn., A. B. Mount Holyoke College, 1966.
- ELLEN SUE KIPNIS KANNER, of Baltimore, Md., A. B. Smith College, 1967.
- DIANA MARGARET KHINOY, of Philadelphia, Pa., A. B. Sarah Lawrence College, 1966.
- PATRICIA ANN FULKERSON LARRABEE, of Towson, Md., A. B. Smith College, 1966.
- SUSAN MARY MARJAMAA, of Greenbrook, N. J., B. S. Bates College, 1966.
- ANNE NUSE MATEY, of Catonsville, Md., B. S. Drexel Institute of Technology, 1965.
- THOMAS ANDREW MATEY, of Catonsville, Md., B. S. Drexel Institute of Technology, 1966.
- ROBERT GEORGE MAWDSLEY, of Baltimore, Md., B. A. The Catholic University of America, 1967.
- JACQUELINE MCBRIEN, of Redwood City, Calif., A. B. University of California, Santa Cruz, 1967.
- ROBERT DOUGLAS McDOWELL, of Sarasota, Fla., B. A. The Catholic University of America, 1967.
- NANCY JO MOORHUS, of Grand Rapids, Mich., A. B. The University of Michigan, 1967.
- JOHN KARL MUTH, of Stevenson, Md., A. B. Oberlin College, 1962.
- JUDITH NIMS, of Baltimore, Md., A. B. The George Washington University, 1966.
- PAUL MARTIN NOVAK, of Milwaukee, Wis., B. A. University of Minnesota, 1966.
- MARY ANNE ONDOVCHAK, of Bala Cynwyd, Pa., A. B. Cornell University, 1967.
- DIETLINDE ISOLDE OPLESCH, of St. Paul, Minn., A. B. Barnard College, 1967.
- CHERYL LESLIE OWLICK, of Baltimore, Md., A. B. Oberlin College, 1967.
- DEAN PAPPAS, of Baltimore, Md., B. S. Yale College, 1961.
- RITA DOROTHY PEER, of Southport, Conn., A. B. Connecticut College, 1966.
- LUCINDA ANNE PRATT, of Chevy Chase, Md., B. A. Wellesley College, 1964.
- SUSAN CHARLOTTA QUENK, of Geneva, N. Y., B. A. William Smith College, 1967.
- KENNETH LEE ROSENTHAL, of Peshtigo, Wis., B. A. Carthage College, 1966.
- CYNTHIA ANN SACK, of New York, N. Y., B. S. The City College of New York, 1964.
- INA SUE SCHREIBMAN, of Philadelphia, Pa., A. B. Barnard College, 1967.
- KAREN ANN SHEEDY, of Williamsville, N. Y., B. S. F. S. Georgetown University, 1967.
- ELAINE MARIE SIMEONE, of Lexington, Mass., A. B. Regis College, 1967.
- MARY ANN SIMONSEN, of Cleveland, Ohio, B. A. Wells College, 1966.
- ELAINE BERNADETTE SLOAN, of Baldwin, N. Y., A. B. College of Mount St. Vincent, 1966.
- RUTH SUSSMAN, of Great Neck, N. Y., A. B. University of California, Berkeley, 1966.
- RALPH LEWIS SUTER, of Troy, Ohio, B. A. Bluffton College, 1966.
- THERESA MAY VERTUNO SWAIN, of Morris Plains, N. J., B. A. Rosary College, 1966.
- SHARON CAROLYN THORBERG, of Elmhurst, Ill., B. A. St. Olaf College, 1966.
- ROBERT EDWARD THURSTON, of Wheaton, Md., B. A. Ohio Wesleyan University, 1965.
- LINDA ANN VAN REUTH, of Baltimore, Md., B. A. University of Delaware, 1967.
- JOAN MCDANIEL DAWSON WALLACE, of Baltimore, Md., A. B. Randolph-Macon Woman's College, 1965.
- LYNNE MARGARET WHITE WALSER, of Washington, D. C., Dipl. de Traducteur, University of Geneva, 1964.
- CHARLOTTE HELENA WILLIAMS, of Brooklyn, N. Y., B. A. College of New Rochelle, 1965.
- ELEANORA WATERS WINN, of Severna Park, Md., B. S. The American University, 1952.
- CAROL ANNE WOOL, of Marblehead, Mass., A. B. Barnard College, 1967.
- MARY ANN YEAGER, of Conrad, Mont., A. B. Middlebury College, 1967.

MASTERS OF ARTS

with titles of essays

- MICHAEL ROBERT ACKERMAN, of Baltimore, Md., Mathematics.
- JAMES WEBER LINN ALLEN, of Baltimore, Md., B.A. Haverford College, 1961. Writing Seminars.
A Collection of Poems.
- ROBERT C. ANTONELLI, of South Bend, Ind., B.A. University of Notre Dame, 1962; S.T.B. Gregoriana University, Rome, 1964; S.T.L., 1966. Near Eastern Studies.
- KENNETH HUNTRESS BALDWIN, JR., of Lathrup Village, Mich., A.B. University of Detroit, 1964; M.A., 1966. English.
- CARL SANDLER BERKOWITZ, of Newtonville, Mass., B.A. Tufts University, 1967. Classics.
- SUSAN JANE BOBBE, of New York, N.Y., A.B. Mount Holyoke College, 1965. Psychology.
- MICHAEL FRANCIS BRENSON, of New York, N.Y., B.A. Rutgers University, 1964. Writing Seminars.
A Collection of Stories.
- JOHN MICHAEL BROWN, of Blacksburg, Va., B.A. Yale University, 1963. Political Economy.
Post-Offering Experience of Companies Going Public.
- NANCY ANN WALTER BURTON, of Denver, Colo., A.B. Knox College, 1965. Philosophy.
- ROBERT LEE BUTLER, of Hibbing, Minn., German.
- PHILIP CRAIG CAGNONI, of Rockford, Ill., B.A. Dartmouth College, 1965. Romance Languages.
- ROBERT CHRISTOPHER CARROLL, of Biddeford, Maine, B.A. The Johns Hopkins University, 1964. Romance Languages.
- ROSALIND HELENE PLEET CHESLOCK, of Baltimore, Md., A.B. Goucher College, 1967. Classics.
- DONNA LEE CROSSAN, of Toronto, Ont., Canada, B.A. University of Toronto, 1966. Psychology.
- VAZKEN MOVSES DER KALOUSTIAN, of Beirut, Lebanon, B.S. American University of Beirut, 1959; M.D., 1963. Biology.
- BARBARA ANN DIXON, of San Marino, Calif., B.A. University of Southern California, 1966. Political Science.
The Political Philosophy of John Steinbeck.
- MARK SCOTT DONAHEY, of Rocking Horse, Wy., A.B. Stanford University, 1967. Writing Seminars.
A Portion of a Novel.
- ALAN HARVEY DORFMAN, of Philadelphia, Pa., B.A. St. John's College, Md., 1963. Mathematics.
- MICHAEL WILLIAM DUNBAR, of Glen Ridge, N.J., A.B. Hiram College, 1964. History.
- DANIEL BARTLETT ELLIOTT II, of Morris Plains, N.J., B.A. St. John's University, Minnesota, 1967. Writing Seminars.
Poems.
- JOHN MORTON ELLIOTT, of Rahway, N.J., A.B. Cornell University, 1966. Political Science.
Communications among House Republicans.
- CATHERINE VIRGINIA BOYLE ERMER, of Baltimore, Md., A.B. Goucher College, 1966. Political Science.
The Effect of Administrative Organization on the Performance of the City Planning Function.
- CAROLE ESTHER FABRICANT, of Brooklyn, N.Y., B.A. Bard College, 1965. English.
- JOHN ERNEST FIEBERLING, of Merced, Calif., A.B. Stanford University, 1966. English.
- SARA ANN MILLER FINE, of Los Angeles, Calif., A.B. University of California, Los Angeles, 1963; A.M. Harvard University, 1965. Romance Languages.
- MICHAEL FRANCIS FOLEY, of Allston, Mass., A.B. Harvard College, 1965. History.
- JOEL EDWARD FOREMAN, of Baltimore, Md., B.S. S. S. Loyola College, 1967. Writing Seminars.
A Collection of Poems.
- RUSSELL INSLEE FRIES, of Maplewood, N.J., B.A. Yale University, 1963. History.
- JACOB CLAUDE GASKINS III, of Greenville, N.C., B.A. The Johns Hopkins University, 1967. Writing Seminars.
A Novel.
- CONRAD DENNIS GEBELEIN, of Baltimore, Md., B.A. The Johns Hopkins University, 1964. Oceanography.
Effects of Light Intensity on Growth, Pigment Concentration, Carbon Assimilation and Excretion in *Isochrysis galbana* Parke.
- PETER ANDERSEN GEISER, of New York, N.Y., B.S. The City College of New York, 1962. Geology.
- EVA K. GORDON, of Vienna, Austria. History.
The Gravamina of the English Clergy 1239-1309, with Special Reference to the Conflict over Benefit of Clergy and the Will.
- WILLIAM LUDOVIC GRANT-ALEXANDER, of Charleston, S.C., B.A. The Citadel, 1967. Writing Seminars.
A Play and a Selection of Poems.
- MICHAEL BARUCH GROSSMAN, of Boston, Mass., A.B. Oberlin College, 1957. Political Science.
Public Opinion and Responsible Government.
- JOHN WILLIAM HALPERIN, of Chicago, Ill., A.B. Bowdoin College, 1963; M.A. University of New Hampshire, 1966. English.

- WILLIAM STANLEY HAMEL, of Towson, Md., B.S. in Eng. United States Naval Academy, 1957. Physics.
Fresnel Zone Plates—A Survey.
- JOHN JOSEPH HANNAWAY, of Washington, D.C., B.A. The Catholic University of America, 1962. History.
- SANDRA HASTINGS, of Brooklyn, N.Y., B.A. Brooklyn College, 1965. History of Art.
- ELIZABETH ROBERTA HATCHER, of Monterey, Calif., B.A. Dominican College of San Rafael, 1966. English.
- JOHN BENNETT HENDERSON, of Ottawa, Ont., Canada, B.Sc. Queen's University, 1965. Geology.
- VICTOR BRUCE HIRSHAUER, of Baltimore, Md., A.B. Loyola College, 1965. History.
- MARK HARIG HOUSTON, JR., of Bridgeport, W.Va., B.A. Cornell University, 1965. Oceanography.
Structure and Volume Flux of the Florida Current from a Representative Section on the Blake Plateau.
- CLINTON NELSON HOWARD, of Los Angeles, Calif., B.A. Exeter College Oxford, 1965. History.
- MICHAEL SCOTT HOWDEN, of San Francisco, Calif., A.B. Middlebury College, 1966. Writing Seminars.
A Long Poem.
- JOHN HENRY IGLESIAS, JR., of Jersey City, N.J., B.A. St. Peter's College, 1966. English.
- LORETTA PAULETTE JOHNSTONE, of Alexandria, Va., B.A. The College of William and Mary, 1966. Political Science.
The Politics of Anglo-French Common Market Relations.
- JAMES JOSEPH KERNAN, of Youngstown, Ohio, B.S. United States Military Academy, 1958. Chemistry.
- PAUL DAVID KIRSCHENBAUM, of Baltimore, Md., A.B. Hamilton College, 1966. Writing Seminars.
Chapters of a Novel.
- THOMAS ROY LARGE, of Philadelphia, Pa., B.A. Swarthmore College, 1967. Writing Seminars.
A Collection of Stories.
- JOHN ROBERT LEAX, JR., of Export, Pa., B.A. Houghton College, 1967. Writing Seminars.
Poems.
- JANE LIPMAN, of Baltimore, Md., B.A. Bennington College, 1960. Writing Seminars.
A Farewell to Alms: Fragment of a Novel.
- WALTER LITTLE, of County Durham, England, B.A. University of Nottingham, 1966. International Studies.
The Political Role of the Labor Unions in Argentina, 1955-1967; A Study of a Political Outgroup.
- HAROLD CLAYTON LIVESAY, of Wilmington, Del., B.A. University of Delaware, 1966. History.
- MICHAEL BARR LONG, of Freeport, N.Y., B.A. Trinity College, Connecticut, 1962. Romance Languages.
- MELVIN ELLING LORENTZEN, of Wheaton, Ill., A.B. Wheaton College, 1949; B.D. Northern Baptist Theological Seminary, 1953; Th.D. 1959. Writing Seminars.
A Novel.
- DAVID KING LOUGHRAN, of Pontiac, Ill., A.B. Dartmouth College, 1966. Romance Languages.
- ARTHUR JAMES LYONS, of Bronx, N.Y., B.A. Manhattan College, 1964. History.
- BARBARA EDITH MACKAY, of Garden City, N.Y., B.A. Wellesley College, 1966. Writing Seminars.
A Collection of Poetry and Prose.
- JILL MARGO CARLTON MANACORDA, of Great Neck, N.Y., A.B. Cornell University, 1964. Romance Languages.
- MARILYN LOUISE ALLEN MAYO, of Norwalk, Conn., A.B. Smith College, 1967. Writing Seminars.
A Collection of Poems.
- ARLON MARK MENDEL, of Chicago, Ill., Writing Seminars.
A Collection of Poems.
- PAUL JOSEPH MIRANTI, JR., of Seaside Park, N.J., B.A. The Johns Hopkins University, 1965. History.
- THELMA STEIN NASON, of Baltimore, Md., B.A. Brooklyn College, 1941. Writing Seminars.
The Possessed Ones.
- MARSHALL IRWIN NECHTOW, of Los Angeles, Calif., B.A. Reed College, 1959. Physics.
A Fotofet Circuit for Sounding Rocket Research.
- JOHN DAVIS NEWELL, of Baltimore, Md., B.A. Ohio Wesleyan University, 1966. Political Science.
Law and Judicial Self-Restraint.
- MICHAEL JOHN NILI, of Pittsburgh, Pa., B.A. Fordham University, 1966. Classics.
- HARVEY LEIGH NOYES, of Baltimore, Md., B.S. The Johns Hopkins University, 1965. Psychology.
- RHODA MARION SPARLER OAKLEY, of York, Pa., B.S. Ed. Millersville State College (Pa.), 1963. History of Art.
- MICHAEL THOMAS O'BRIEN, of El Paso, Texas, B.S. United States Military Academy, 1962. Chemistry.
- MICHAEL STANLEY OIDICK, of Baltimore, Md., B.A. The Johns Hopkins University, 1966. Education.
More Effective Teaching through Better Teacher-Pupil Relations.
- SAKIKO NAKAYA OLSEN, of Baltimore, Md., B.A. Northwestern University, 1955. Geology.
- DIETLINDE ISOLDE OPLESCH, of St. Paul, Minn., A.B. Barnard College, 1967. German.
- ROBERT GEORGE PACHELLA, of Franklin Lakes, N.J., B.S. The University of Michigan, 1966. Psychology.
- JAMES PAVLAKIS, of Haverhill, Mass., B.A. Marlboro College, 1958. Writing Seminars.
A Portion of a Novel.

- JOHN KENNEDY PAYN, of Baton Rouge, La., B. S. Louisiana State University, 1964. Physics.
The Mössbauer Effect at Critical Points of Magnetic Materials.
- RALPH LAMAR PEARSON, of Trenton, N. J., B. A. Gettysburg College, 1961; M. A. New York University, 1965. History.
- ROBERT ANDREW PFEFFER, of Baltimore, Md., B. A. Trinity University, San Antonio, Texas, 1962. Physics.
- JULIET RAPAPORT PHILLIPS, of Baltimore, Md., A. B. Radcliffe College, 1965. Psychology.
- PATRICK GLENN PORTER, of Pasadena, Texas, B. A. William Marsh Rice University, 1966. History.
- DONNA JOYCE PROVINCE, of Upper St. Clair, Pa., B. S. The College of William and Mary, 1966. Psychology.
- THOMAS FRANCIS RABBITT, JR., of Hyde Park, Mass., A. B. Harvard College, 1966. Writing Seminars.
A Portion of a Novel.
- LLOYD NORMAN RAUPP, of Baltimore, Md., A. B. Muhlenberg College, 1967. German.
- BRENT LEROY ROGERS, of Brookfield, N. Y., B. A. Dartmouth College, 1965. History.
- JILL RUBENSTEIN, of Pittsburgh, Pa., A. B. University of Rochester, 1965; M. A. T. Harvard University, 1966. English.
- SUELLEN SAFIR RUBIN, of Baltimore, Md., A. B. Cornell University, 1965; M. S. Yale University, 1966. Psychology.
- BRANKO I. SALAJ, of Lidings, Sweden, Fil. Kand. University of Stockholm, 1960. Political Economy.
Residential Construction Prices in Sweden, 1950-65.
- FRANK JOSEPH SAUL, of Hazleton, Pa., B. A. The Pennsylvania State University, 1965. English.
- JOAN MARIE SAUNDERS, of Bethesda, Md., B. A. Marquette University, 1966. History.
- THOMAS ROEGER SCHMUHL, of Elkins Park, Pa., Writing Seminars.
Circle of Fullness: J. D. Salinger's Anthropological System.
- DIANE PENNY ULMAN SCHWARZ, of Baltimore, Md., B. A. Chatham College, 1962. Romance Languages.
- JOHN ALROY SHOEMAKER, of Laurel, Miss., B. S. Mississippi State University, 1963. Physics.
- JOHN HAROLD SINNIGEN, of Hawthorne, N. J., B. A. Dartmouth College, 1967. Romance Languages.
- MICHAEL PAUL SMITH, of Kansas City, Mo., A. B. Rockhurst College, 1963. Physics.
- CONSTANCE ELIZABETH SNYDER, of York, Pa., B. A. Radcliffe College, 1965. History.
Privilege, Anarchy, or Compromise: The Bank of North America and the Common Good.
- EILEEN JEFFRIES SPRING, of Baltimore, Md., B. A. University of Toronto, 1947. History.
The Settlement of Land in 19th Century England.
- PATRICIA STROUSE, of Baltimore, Md., A. B. Wheaton College, 1967. Writing Seminars.
A Collection of Stories.
- DOROTHY GARRISON SWIFT, of Grand Rapids, Mich., B. A. Swarthmore College, 1961. Oceanography.
Growth of Vitamin B-12 Limited Cultures: *Cyclotella nana*, *Monochrysis lutheri* and *Isochrysis galbana*.
- NORMAN CHARLES THEISS, of San Leandro, Calif., B. A. Concordia Seminary, 1956; B. D., 1966. Near Eastern Studies.
- CHARLES MICHAEL TIDMARCH, of Baltimore, Md., B. A. Moravian College, 1966. Political Science.
The Process of Congressional Recruitment and its Influence upon the Character of Representation: A Case Study of New York City.
- YUKIHIKO TORII, of Sapporo, Japan, B. A. Hokkaido University, 1963; M. A., 1965. Psychology.
- THOMAS JAMES TOUREK, of Madison, N. J., B. S. Wittenberg University, 1965. Geology.
- RONALD JAMES VERSIC, of Dayton, Ohio. Physics.
Further Spectroscopic Studies of a Low Pressure Electromagnetically Generated Helium Plasma.
- GERRIT ANDRIES VISSER, of Vanrhynsdorp, South Africa, B. Sc. The University of Stellenbosch, South Africa, 1961. Oceanography.
An Analysis of Atlantic Waters off the West Coast of Southern Africa.
- GEORGE WILLIAM WALKER, of Richmond, Va., A. B. Davidson College, 1966. German.
- NANCY ELIZABETH MOLLER WEARE, of Sanford, Maine, A. B. Smith College, 1962. Oceanography.
Metal Chelates and Synthetic Media for Culturing Marine Algae.
- JAMES EDWARD WELSCH, of Rock Hill, Mo., B. S. United States Naval Academy, 1967. Chemistry.
- WILLIAM BRADFORD WILEY II, of Summit, N. J., B. S. Columbia University, 1965. History.
- RICHARD JOHN WILLIAMS, of Freeland, Pa., B. A. Lehigh University, 1966. Geology.
- STEPHEN E. WILMORE, of Princeton, N. J., A. B. Lincoln University, 1967. Writing Seminars.
A Collection of Poems.
- WILLIAM JOSEPH WISEMAN, JR., of Baltimore, Md., B. E. S. The Johns Hopkins University, 1964; M. S. E., 1966. Oceanography.
LASERS in Oceanography.

JOHN THEODORE WOLD, of Los Angeles, Calif., B.A. California Lutheran College, 1965. Political Science.

Effects of Reapportionment: Roll-Call Voting in the North Dakota Legislative Assembly.

GARY LEWIS WOODS, of Modesto, Calif., B.A. University of California, Berkeley, 1965. Biophysics.

(112)

DOCTORS OF PHILOSOPHY

with titles of dissertations

EVANGELOS ANGELOS AFENDRAS, of Athens, Greece, B.A. The Johns Hopkins University, 1965; M.A., 1966. Linguistics.

The Balkans as a Linguistic Area: A Study in Phonological Convergence.

JAMES CREW ALEXANDER, of Pittsburgh, Pa., B.A. The Johns Hopkins University, 1964. Mathematics.

Mod P Connected K-theory and the Stable Homotopy Groups of Spheres.

JOHN DAVID BALDWIN, of Cincinnati, Ohio, B.A. The Johns Hopkins University, 1963. Social Relations.

A Study of the Social Behavior of a Semifree-ranging Colony of Squirrel Monkeys.

WILLIAM PREAS BANKS, of Clifton, Va., B.A. St. John's College, Maryland, 1964; M.A. The Johns Hopkins University, 1966. Psychology.

An Analysis of the Causes of Interference in Forgetting.

JAMES PIERCE BAREFIELD, of Birmingham, Ala., B.A. Rice Institute, 1956; M.A., 1958. History.

The King's Bishop: The Role of Peter des Roches in Royal Administration, 1197-1216.

RANDOLPH BARTON, JR., of Wilmington, Del., A.B. Princeton University, 1963; M.A. The Johns Hopkins University, 1965. Chemistry.

Refinement of the Crystal Structure of Buergerite and the Absolute Orientation of Tourmalines.

CHARLES ALLEN BAYENS, of Chicago, Ill., B. Chem. Engr. University of Detroit, 1961; M.S.E. The Johns Hopkins University, 1963. Chemical Engineering.

Mass Transfer in a Dispersion.

ALAN SHERMAN BELL, of Bronx, N.Y., B.A. Dartmouth College, 1964; M.A. The Johns Hopkins University, 1967. Romance Languages.

Pedro Salinas, the Critic.

RUDOLPH JAROSLAV WENCESLAUS BERAN, of Toronto, Ont., Canada, B.Sc. University of Toronto, 1964; M.A., 1965. Statistics.

Tests for Uniformity of a Distribution on a Compact Homogeneous Space.

FREDERICK RUSSELL BLATTNER, of Houston, Texas, A.B. Oberlin College, 1962. Biophysics.

The Interaction of RNA Polymerase with T7 DNA Molecule.

RANDOLPH WILSON BROMERY, of Amherst, Mass., B.S. Howard University, 1956; M.S. The American University, 1962. Geology.

Geological Interpretation of Aeromagnetic and Gravity Surveys of the Northeastern End of the Baltimore-Washington Anticlinorium, Harford, Baltimore, and Part of Carroll County, Maryland.

PHILIP CRAIG CAGNONI, of Colorado Springs, Colo., B.A. Dartmouth College, 1965, M.A. The Johns Hopkins University, 1967. Romance Languages.

The Leyendas of Gustavo Adolfo Bécquer.

BARBARA HARRELL CARSON, of Cocoa, Fla., B.A. The Florida State University, 1964; M.A. The Johns Hopkins University, 1965. English.

Orpheus in New England: Alcott, Emerson, and Thoreau.

ROMOLO JOSEPH CECCARELLI, of Baltimore, Md., B.A. Harpur College, 1961. Romance Languages.

Dante's Two Goals.

HANS PETER CLAMANN, of Converse, Texas, B.S. St. Mary's University, 1961. Biomedical Engineering.

A Quantitative Analysis of the Firing Pattern of Single Motor Units of a Skeletal Muscle of Man, and Their Utilization in Isometric Contraction.

MURRAY ALAN COHEN, of Baltimore, Md., B.A. The Johns Hopkins University, 1964; M.A., 1965. English.

Forms of True Judgment in the Eighteenth-Century English Novel.

STANLEY CLINTON COLLYER, of Stamford, Conn., B.S. Denison University, 1964; M.A. The Johns Hopkins University, 1966. Psychology.

Incentive Motivation and Choice Reaction Time Performance.

RICHARD HENRY CONRAD, of Highland Park, N.J., A.B. Brandeis University, 1962. Biology.

Intramolecular Excitation Transfer in a Model System and in Alcohol Dehydrogenase.

BENJAMIN FRANKLIN COURTRIGHT, JR., of Baltimore, Md., B.A. The Johns Hopkins University, 1939. Operations Research and Industrial Engineering.

An Operations Research and Systems Engineering Study of a University Library.

- ALBERT WILLIAM CURRIER, of Washington, D. C., B. A. State University of Iowa, 1954; M. A. The Johns Hopkins University, 1959. Mathematics.
On the Fibring of Non-Compact Solvmanifolds Which Have Low Dimension or Low Rank.
- CONSTANTINE MICHAEL DAFERMOS, of Athens, Greece, Engr. Dipl. Athens National Technical University, 1964. Mechanics.
On the Existence and Asymptotic Stability of Solutions to the Equations of Linear Thermoelasticity.
- STYLIANI C. DAFERMOS, of Athens, Greece, Dipl. in C. E. Athens National Technical University, 1964. Operations Research and Industrial Engineering.
Traffic Assignment and Resource Allocation in Transportation Networks.
- HERBERT THADDEUS DAVIS III, of Jacksonville, Fla., B. S. in Bus. University of Florida, 1964; M. of Stat., 1966. Statistics.
Inference Based on the Periodogram for Stationary Gaussian Time Series.
- THOMAS HENRY DAWSON, of Dahlgren, Va., B. S. Virginia Polytechnic Institute, 1963; M. S. E. The Johns Hopkins University, 1965. Mechanics.
The Plastic Deformation of Crystalline Aggregates.
- LEE RICHARD DEBOW, of Davenport, Iowa, B. A. Northwestern University, 1962; M. A. The Johns Hopkins University, 1965. Chemistry.
A Spectral Analysis of a Hemoglobin Model System.
- RICHARD LEROY DEGERMAN, of Hughson, Calif., A. B. Stanford University, 1964; M. A. The Johns Hopkins University, 1966. Psychology.
Multidimensional Analysis of Complex Structure: Mixtures of Class and Quantitative Variation.
- CHARLES GRIFFITH DEWALD, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1960. Electrical Engineering.
Constrained Flow Models for Traffic Network Analysis.
- LEROY DAVID DICKSON, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1960; M. S. E., 1962. Electrical Engineering.
An Investigation of Fresnel and First Order Zone Plates.
- RICHARD PAUL DOOLEY, of Baltimore, Md., B. S. E. The Johns Hopkins University, 1962. Electrical Engineering.
The Optimum Design of Linear Nonuniformly Spaced Arrays.
- ROBERT VALENTINO EDWARDS, of Baltimore, Md., B. A. The Johns Hopkins University, 1962; M. S. E., 1964. Chemical Engineering.
Temperature Dependence of Collision Induced Pre-dissociation Rate Constant of $I_2(3\pi uo^+)$.
- WILLIAM DENNIS EKLOF, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1964. Operations Research and Industrial Engineering.
Multiperiod Transportation Problems.
- WILLIAM WEBSTER EMMETT, of Arlington, Va., B. C. E. Georgia Institute of Technology, 1959; M. S. C. E., 1961. Geography.
Mechanics of Overland Flow in Geomorphic Process.
- HAMILTON EMMONS, of Ithaca, N. Y., B. A. Harvard College, 1952; M. S. University of Minnesota, 1958; M. E. E. New York University, 1962. Operations Research and Industrial Engineering.
The Optimal Use of Radioactive Pharmaceuticals in Medical Diagnosis.
- HAROLD PAUL ERICKSON, of Baltimore, Md., B. S. in Phys. Carnegie Institute of Technology, 1962. Biophysics.
Development and Analysis of Proposed Techniques for Nucleic Acid Sequence Studies by Electron Microscopy.
- EDWARD JAMES ERWIN, of Glendale, N. Y., B. B. A. The City College, New York, 1960. Philosophy.
The Concept of Meaninglessness.
- LARRY FRANCIS FIELD, of Washington, D. C., A. B. Georgetown University, 1964; M. A. Tufts University, 1965. Classics.
The Epilogues of Ammianus Marcellinus.
- JAMES WILLIAM FORRESTER, of New York, N. Y., B. A. St. John's College, Maryland, 1962. Philosophy.
An Examination of the Second Part of Plato's *Parmenides*.
- WARREN DAVID FORRESTER, of Oshawa, Ont., Canada, B. A. University of Toronto, 1947; M. Sc. University of British Columbia, 1961. Oceanography.
Currents and Geostrophic Currents in the St. Lawrence Estuary.
- ROBERT BAGWELL FREY, of Towson, Md., A. B. Duke University, 1962; M. A. The Johns Hopkins University, 1964. Chemistry.
Some Model Studies of the Quantum Theory of the Unimolecular Rate Constant.
- DAVID HENRY FRIEDMAN, of Long Beach, N. Y., B. E. E. Polytechnic Institute of Brooklyn, 1960; M. S. in E. E. Massachusetts Institute of Technology, 1962. Electrical Engineering.
Detection of Signals by Template Matching.
- EARL WILLARD FRIEND, JR., of Mill Run, Pa., B. A. Washington and Jefferson College, 1962; M. A. The Johns Hopkins University, 1965. Chemistry.
The Photochemistry of 1,2,4,7-Tetraphenylcyclooctatetraene and Related Compounds.
- THOMAS LOUIS GABRIELE, of Timonium, Md., B. S. in E. E. Lehigh University, 1962; M. S. E. The Johns Hopkins University, 1964. Electrical Engineering.
Effect of Measurement Induced Perturbation on Information Rates in Radar, Mechanics and Communications.

- GLEN ROSS GALE, of North Hollywood, Calif., B. A. Dartmouth College, 1963; M. A. The Johns Hopkins University, 1966. Romance Languages.
Sebastián de Córdoba's *Garcilaso a lo divino*: Introduction, Text, and Notes.
- WILLIAM BENTLEY GANDRUD, of Tuscaloosa, Ala., B. S. University of Alabama, 1961. Physics.
Rare Earth Infrared Lifetimes and Exciton Migration Rates in Trichloride Lattices.
- REGINALD HOOKER GARRETT, of Baltimore, Md., B. S. The Johns Hopkins University, 1964. Biology.
Further Purification and Characterization of the Assimilatory Nitrate Reductase from *Neurospora crassa*.
- ROBERT LEE GARTEN, of Baltimore, Md., A. B. Gettysburg College, 1963; M. A. The Johns Hopkins University, 1965. Chemistry.
Product, Kinetic and Carbon-14 Tracer Studies of the Decomposition of n-Pentane and 2-Methylbutane over a Silica-alumina Catalyst.
- HANNA MARIA KATALIN GELDRICH, of Baltimore, Md., A. B. Mount St. Agnes College, 1963; M. A. The Johns Hopkins University, 1964. German.
Heine and the Modernistas.
- HOWARD GERSHMAN, of Philadelphia, Pa., A. B. Temple University, 1964. Biology.
Age-dependence of Some Cell Surface Properties in Relation to the Measurement of Cell-to-Cell Adhesion.
- DANIEL THOMAS GILLESPIE, of Baltimore, Md., B. A. The Rice Institute, 1960. Physics.
Some Aspects of Resonance Production and Diffraction-Dissociation in 5.44 GeV/c K⁺p Interactions.
- MYRON FREDRIC GOODMAN, of Baltimore, Md., B. S. Queens College, New York, 1960; B. S. E. E. Columbia University, 1962. Electrical Engineering.
Adenosine Triphosphate Hydrolysis in the Presence of Laser Light.
- WILLIAM BERNARD GORDON, of Baltimore, Md., B. S. The George Washington University, 1959; M. S., 1960. Mathematics.
On the Method of Steepest Descent Applied on the Sobolev Spaces H^k (X, Y).
- RICHARD LANDOLIN GOTTWALD, of Baltimore, Md., A. B. The University of Michigan, 1963; M. A. The Johns Hopkins University, 1966. Psychology.
Some Effects of Partly Redundant Attributes on Concept Attainment.
- MIKLAVŽ GRABNAR, of Ljubljana, Yugoslavia. Biology.
Isolation and Properties of Enteric Phages.
- HARVEY JOEL GREENBERG, of Miami, Fla., B. S. I. E. University of Miami, 1962. Operations Research and Industrial Engineering.
Optimal Attack of a Command and Control Communications Network.
- BERNARD ADOLPH GROPPER, of Baltimore, Md., B. S. University of Maryland, 1964; M. A. The Johns Hopkins University, 1966. Psychology.
Effects of Spatial-Temporal Ordering on Short-Term Memory for Arrays of Digits.
- MICHAEL BARUCH GROSSMAN, of Washington, D. C., A. B. Oberlin College, 1957; M. A. The Johns Hopkins University, 1967. Political Science.
The Theory of Public Opinion from Bryce to Lippmann.
- RICHARD LAWRENCE HALLBERG, of Batington, Ill., B. A. Carleton College, 1963. Biology.
Identification of Newly Synthesized Ribosomal Proteins in *Xenopus laevis* Embryos.
- JAGDISH CHANDER HANDA, of Nairobi, Kenya, B. Sc. University of London, The London School of Economics and Political Science, 1962. Political Economy.
A New Approach to the Theory of Portfolio Selection.
- FOREST WARYN HANSEN, of Lake Forest, Ill., A. B. Harvard College, 1953; M. A. University of Wisconsin, 1957. Philosophy.
Music, Feeling, and Meaning: A Study of Four Theories.
- WAYNE ARTHUR HENDRICKSON, of Spring Valley, Wis., B. A. Wisconsin State College, 1963. Biophysics.
The Crystal Forms of Lamprey Hemoglobin and Crystalline Transitions between Ligand States.
- NANCY MAIN HENLEY, of Baltimore, Md., B. S. The Johns Hopkins University, 1964; M. A., 1967. Psychology.
A Psychological Study of the Semantics of Animal Terms.
- EDMUND GEORGE HENNEKE II, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1963; M. S. E., 1966. Mechanics.
The Orientation Dependence of Vibrational Modes and Their Associated Dislocation Damping in Hexagonal Metals.
- ROBERT HIGGS, of Baltimore, Md., B. A. San Francisco State College, 1965. Political Economy.
Location Theory and the Growth of Cities in the Western Prairie Region, 1870-1900.
- RICHARD IVES HIRES, of Baltimore, Md., B. S. in Phys. Rensselaer Polytechnic Institute, 1961; M. A. The Johns Hopkins University, 1964. Oceanography.
An Experimental Study of Wind-Wave Interactions.
- ARTHUR KENNETH HOCHBERG, of Ellicott City, Md., B. E. S. The Johns Hopkins University, 1960; M. S. E., 1962. Electrical Engineering.
A Theoretical Investigation of Core States, Energy Bands, and Impurity Atoms in Silicon.
- THOMAS ALEXANDER HOPKINS, of Pittsburgh, Pa., B. A. Amherst College, 1961. Biology.
Mechanism and Excited State Products of Firefly Bioluminescence: Chemiluminescence as a Model System.

- PHILIP MACMANNUS HOWE, of Bel Air, Md., B.S. Worcester Polytechnic Institute, 1963; M.A. The Johns Hopkins University, 1965. Chemistry.
Crystal Growth and Habit Modification.
- JACOB WEN-KUANG HUANG, of Taipei, Taiwan, B.S. National Taiwan University, 1958. Physics.
Excited State Absorption from Metastable States of Ions in Crystal.
- NORDEN EH HUANG, of Taipei, Taiwan, B.S. in Eng. National Taiwan University, 1960. Mechanics.
Particle Diffusion in a Random Gravity Wave Field.
- GERALD QUINCY HURWITZ, of Westminster, Md., A.B. The George Washington University, 1955; M.A. The Johns Hopkins University, 1962. Philosophy.
A Defense of Kant's Ethics and Metaphysics against Moore's Early Criticism.
- JOHN JEFF JARVIS, of Birmingham, Ala., B.S. in Ind. Engr. University of Alabama, 1963. Operations Research and Industrial Engineering.
Optimal Attack and Defense of a Command and Control Communications Network.
- PAUL ALLEN JENSEN, of Chicago, Ill., B.S. University of Illinois, 1959; M.S. in E.E. University of Pittsburgh, 1963. Operations Research and Industrial Engineering.
A Graph Decomposition Technique for the Design of Reliable Redundant Electronic Networks.
- MICHAEL GEOFFREY JOHNSON, of Minneapolis, Minn., B.A. Carleton College, 1964; M.A. The Johns Hopkins University, 1966. Psychology.
The Distributional Aspects of Meaning Interaction in Agrammatical Verbal Contexts.
- KENNETH STANLEY KAYE, of Glenolden, Pa., B.S. The Pennsylvania State College, 1950. Mechanics.
Rapid Acceleration of High Intensity Turbulent Shear Flow.
- JOHN EDWIN KEEFE, of Concord, N.H., A.B. Boston College, 1964. Classics.
A Comparison of the Use of Bahuvrihi Compounds and Case-constructions in Selected Greek Authors.
- THOMAS JESSE KELLY, JR., of Pittsford, N.Y., B.A. The Johns Hopkins University, 1962. Biophysics.
The Identification of an Intermediate in the Replication of Phage T7.
- VALDIS KIBENS, of Cromwell, Conn., B.E. Yale University, 1957. Mechanics.
The Intermittent Region of a Turbulent Boundary Layer.
- LARRY GEORGE KINCAID, of Kansas City, Mo., B.A. Wabash College, 1961. History.
The Legislative Origins of the Military Reconstruction Act, 1865-1867.
- NANCY ROWENA KINGSBURY, of Alexandria, Va., A.B. University of Miami, 1964; M.A. The Johns Hopkins University, 1965. Psychology.
The Context Effect in Multidimensional Scaling.
- JOHN ARTHUR KLOETZEL, of Los Angeles, Calif., A.B. University of Southern California, 1962. Biology.
A Fine Structural Analysis of Function and Development of Larval Salivary Glands in *Chironomus thummi*.
- BENJAMIN GIBBS KOHL, of Middletown, Del., A.B. Bowdoin College, 1960; M.A. University of Delaware, 1962. History.
The Signoria of Francesco il Vecchio Carrara in Padua, 1350-1388.
- THOMAS ALAN KOVATS, of Des Moines, Iowa, B.S. Georgetown University, 1960. Physics.
Recoilless Nuclear Resonant Absorption in Metallic Iron from the Curie Point to the Gamma-Delta Phase Transition.
- R. KENT LANCASTER, of West Point, Miss., B.S. Mississippi State University, 1948; M.A., 1959. History.
King Henry III and the Patronage of Religious Art.
- JULES MORRIS LERNER, of Englewood, N.J., B.A. Bowdoin College, 1963. Biology.
RNA Synthesis and Histone Content in Liver and Erythrocyte Nuclei of the Chick.
- MARTIN LOUIS LEVIN, of Fairfield, Conn., S.B. Massachusetts Institute of Technology, 1958. Social Relations.
The Political Socialization of Adolescents.
- ROY CHARLES LINDHOLM, of Washington, D.C., B.S. University of Michigan, 1959; M.A. The University of Texas, 1963. Geology.
Carbonate Petrography of the Onondaga Limestones, New York.
- DAVID ALLEN LINDSEY, of Nehawka, Nebr., B.S. The University of Nebraska, 1963. Geology.
The Sedimentology of the Huronian Gowganda Formation, Ontario, Canada (with Special Reference to the Whitefish Falls Area).
- FREDRIC ALAN LITT, of New York, N.Y., B. of Chem. Engr. Cooper Union, 1961; M.A. The Johns Hopkins University, 1964. Chemistry.
Photosensitized Oxygenation Mechanistic Studies.
- PAUL RAYMOND LONGAN, of New York, N.Y., B.A. Queen's College, New York, 1960. Romance Languages.
The *Yvain* of Chrétien de Troyes: An Interpretation.
- NEIL ROBERT LUEBKE, of Fremont, Nebr., B.A. Midland College, 1958; M.A. The Johns Hopkins University, 1962. Philosophy.
Paul Tillich's Philosophy and Theology of History.
- GEORGE JURIS LUSTE, of Montreal, Que., Canada, B.A. Mount Allison University, Canada, 1961. Physics.
Diffraction Dissociation and 5.5 GeV/c $K^+ p \rightarrow 4$ prong.
- ROBERT MOFFAT MACQUEEN, of Memphis, Tenn., B.S. Southwestern at Memphis, 1960. Atmospheric Sciences.
Infrared Observations of the Outer Solar Corona.

- HANS MAIR, of Baltimore, Md., Dr. of Laws University of Innsbruck, 1954; B.A. Carleton College, 1955. Political Science.
The Position of the Austrian Republic in International Law: 1918-1967.
- DONALD AARON MANKIN, of Philadelphia, Pa., B.S. in E.E. Drexel Institute of Technology, 1964; M.A. The Johns Hopkins University, 1966. Psychology.
A Study of the Influence of Perceptual Anchors and Visual Noise on the Vertical-Horizontal Illusion.
- BERNARD REESE MATHEWS, JR., of Baltimore, Md., B.A. Austin College, 1957. Philosophy.
Hume's Theory of Sympathy.
- EDWARD FRANCIS MCCLENNEN, of Baltimore, Md., A.B. University of Michigan, 1959. Philosophy.
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ACADEMIC DRESS

THE custom of wearing academic dress stems from the Middle Ages, when scholars were also clerics and wore the costume of their monastic order. The hood was originally a cowl attached to the gown which could be slipped over the head for warmth. The cap, originally round, later became the square mortar-board as we see it today.

Today the cap is the same for all American degrees, although the recipient of a doctoral degree is entitled to wear a gold tassel. The gown varies for the respective degrees. The Bachelor's gown is worn closed and can be distinguished by its long, pointed sleeves. The Master's gown is designed to be open with the arms worn through the slits in the elbows of the sleeves. The Doctor's gown, also worn open, has full, bell-shaped sleeves with three horizontal bars stitched across the upper arm. There is a velvet panel draped around the neck and stitched down the front edges. This velvet trimming may be either black or the same color as the velvet border of the hood.

The hood also varies for the respective degrees. The Bachelor's and Master's hoods are of the same design, pointed at the base. The Bachelor's hood is three feet long; the Master's hood is three and one half feet long. The Doctor's hood is four feet long, of fuller shape and rounded at the base.

The hood is bordered with velvet, the color of which indicates the field of study in which the degree was earned:

Dark blue	Philosophy
Light blue	Education
Orange	Engineering
Gold-yellow	Science
Green	Medicine
Salmon pink	Public Health
Pink	Music
Purple	Laws
White	Arts and Letters

The silk lining of the hood represents the institution which granted the degree. If more than one degree is held, the gown and hood of the higher or highest degree is worn. The linings seen in today's academic procession may include:

BLACK

Black, old gold chevron..... Johns Hopkins

BLUE

Light blue, white chevron.....Columbia
 Dark blue.....Yale
 Blue with white chevron.....Duke
 Dark blue, two orange chevrons..Illinois
 Light blue, two white chevrons..North Carolina

GOLD

Old gold, maroon chevron..... Minnesota
 Old gold.....Iowa
 Gold, blue chevron.....California
 Gold

PURPLE

Purple, gold chevron.....Northwestern
 Purple

RED

Bright red..... Wisconsin
 Plum, with scarlet..... London
 Maroon

YELLOW

Dandelion yellow..... Michigan
 Maize, azure blue chevron..... Sorbonne
 Yellow and white..... Rochester

THE UNIVERSITY ODE

Truth guide our University
And from all error keep her free;
Let Wisdom yield her choicest treasure,
And Freedom reach her fullest measure;
Oh, let her watchword ever be
The truth of God will make you free,
Will make you free!

THE UNIVERSITY MOTTO

Veritas vos liberabit.

The truth shall make you free.
—St. John 8:32

